Fortune

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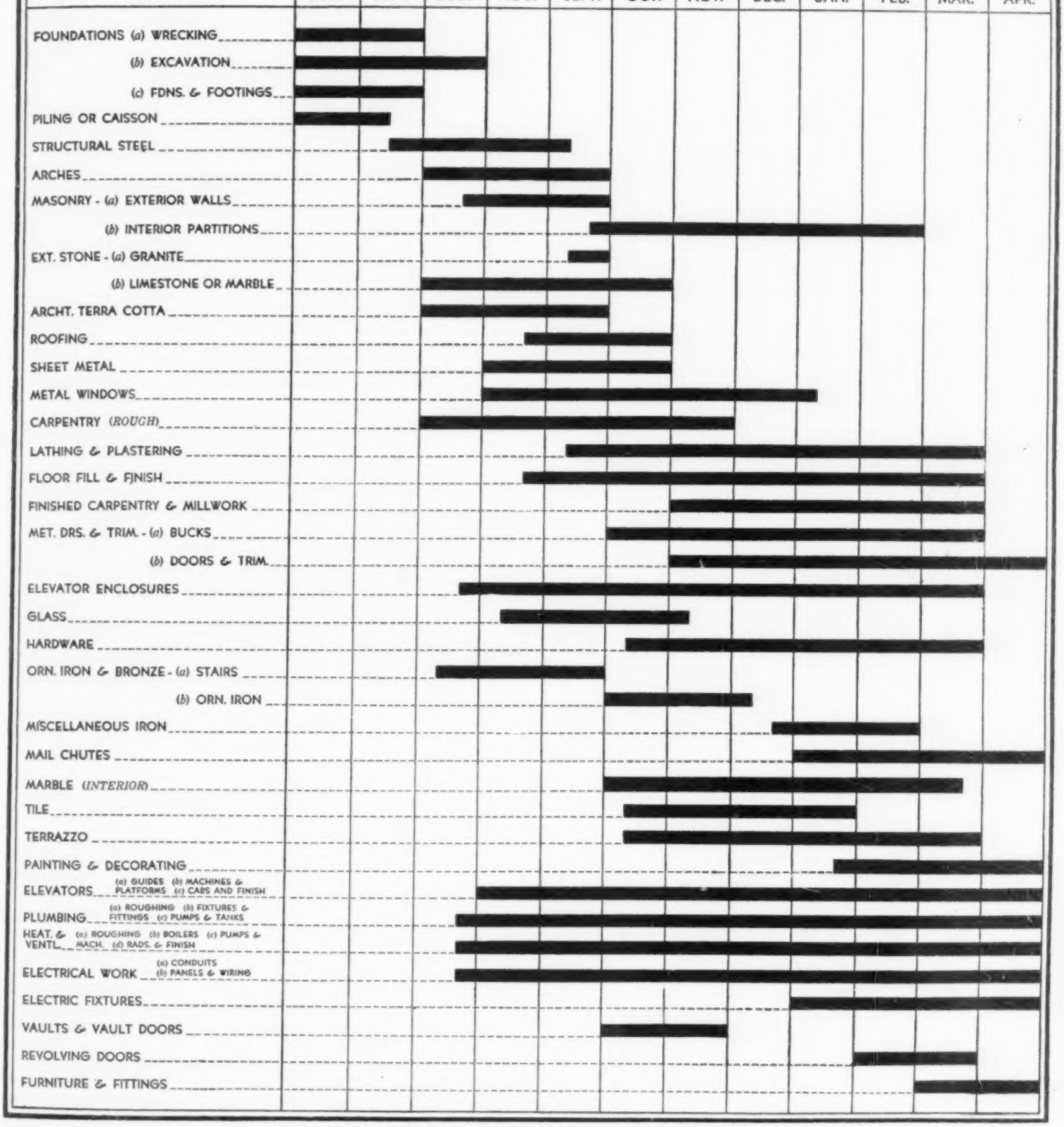


THIS WAS A RECORD IN SKYSCRAPER CONSTRUCTION

DESIGN FOR AN OFFICE BY RAYMOND HOOD

DAVID BELASCO

WILLIAM WRIGLEY JR. (WM. WRIGLEY JR., COMPANY)

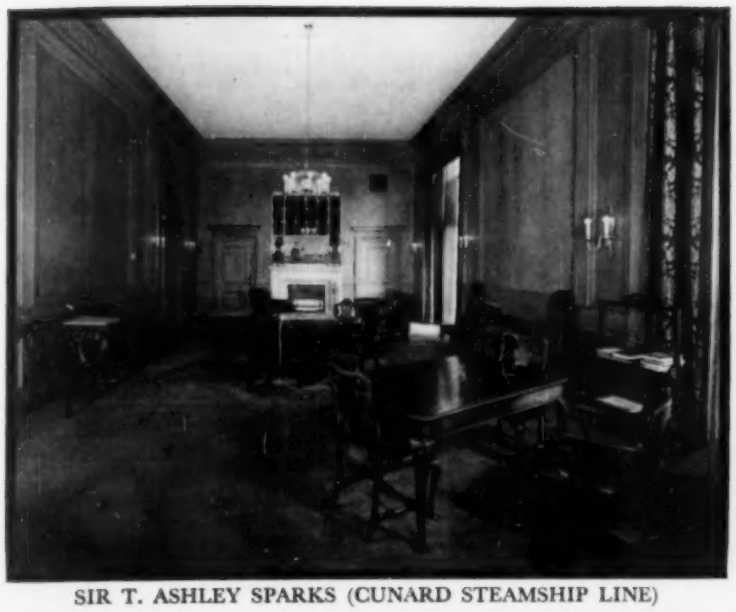
ALBERT H. WIGGIN (CHASE NATIONAL BANK)

WILLIAM W. ATTERBURY (PENNSYLVANIA RAILROAD CO.)

The Executive and His Office

PARTICULARLY if the man be married, his office is more castle than his home. He it is, after all, who decides whether his desk shall remain tidy or untidy. It is Mr. Wrigley's whim which elects that an elephant shall grace the center of his directors' table and that western pictures shall hang on his walls. No man can dispute with David Belasco the lavish disorder of his office or argue Albert Wiggin out of the chasteness which surrounds him. Certainly the roll-top desks (now being moved to new surroundings) reveal Mr. George Eastman, and the stand-up table at which Mr. Louis F. Swift transacts much of his business mirrors the simplicity and directness of his executive method. Wherever a man works, he perforce makes his impress.

But it is only within recent years that the American office, instead of being a desk, a spittoon, and an insurance company calendar, has suffered a change into Chippendale or French green or something reminiscent of the Colonial. It is only lately that the American business man will show you his office with as much pride as he will



SIR T. ASHLEY SPARKS (CUNARD STEAMSHIP LINE)

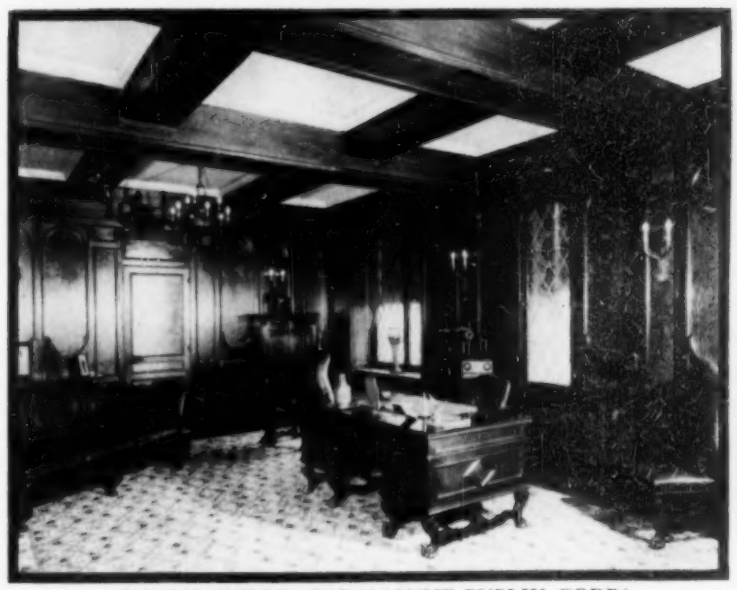
LOUIS F. SWIFT (SWIFT & CO.)

GEORGE W. BACON (FORD, BACON & DAVIS)

GEORGE EASTMAN (EASTMAN KODAK CO.)

his house. Again it is only lately that his office may be in better taste than his house. Three things have contributed. Not ashamed of his trade and seeing luxury about him, the American executive has wished to bring that luxury to his place of work, tactfully and indirectly displaying the great soundness of a business which permits such offices, and, be it said, greatly adding to his own personal comfort. And, then, the pervasive activity of interior decorators, who in this day can scarcely pass through a tunnel without wondering how it would look in chintzes. Finally, the skyscraper, which has challenged its tenants to match its beauty.

From the offices pictured on these pages, it is easy to pick the old and the new. As the exterior of the skyscraper becomes simpler and more vigorous in line, so the decoration of its offices moves toward greater cleanliness, better air and light, more restful design. The first interior shown on these pages (designed by Raymond Hood and exhibited at the Metropolitan Museum of Art) suggests the paths along which the modernists would lead the business man. And the Ford, Bacon & Davis offices reveal the extent to which some executives have followed the suggestion. Whether or not steel furniture, carefully balanced color, and geometric design become generally accepted, there is no doubt but that the offices of the future will more closely approximate this simplicity than either the confusion of Mr. Belasco's rooms or the period styles of such offices as that of Sir T. Ashley Sparks.



ADOLPH ZUKOR (PARAMOUNT PUBLIX CORP.)

The A & P in Fairfield, Conn.

Its Griffin and its Peck; its friends and competitors; its busy, profitable day; and, finally, its place in a community of 17,000 Jenningses, Palmers, Burrs, and Nemeczkys.

IN Fairfield, Connecticut, there is a street called Main Street. Near its economic center, just beyond the railroad tracks as you motor toward Bridgeport and the Yale Bowl, Mrs. Frank Saum, widow of Fairfield's late favorite barber, owns a property. As a woman of sound judgment she has leased part of her frontage to the world's largest grocer, who pays her some $250 a month for the use of a double-fronted red-brick store mortared blue. The two fronts have been merged into the Great Atlantic and Pacific Tea Company "combination" Store No. 820 under the management of one Thomas F. Griffin (groceries) and A. B. Peck (meats).

Mr. Griffin and Mr. Peck are popular. Nearly one-twentieth of Fairfield's 17,000 population—the exact average is 802—drop in to see them every day. Every day these visitors carry away with them packages to the value of $641.66 or eighty cents per customer; and on these sales Mrs. Saum's tenant makes an average net profit of nearly two cents per customer, or a daily total, after all charges, of $15.97. Since the store is open six days a week, the two managers "send out of town" profits of $95.82 during that period; about $400 during a month; something like $5,000 a year.

From the right hand screen door of Store No. 820 there emerges every five minutes or so a tall figure in starched white jacket and apron, a shining pink face, a head nearly bald, an earnest, dignified demeanor: Thomas F. Griffin, grocer par excellence. Imperturbably courteous, somewhat lacking in sense of humor, Mr. Griffin carries before him a box stuffed with packages of every shape and size, often very heavy. Beside him walks the lady who has just made the purchase, glancing up and down the street a little more

nervously than the manager as they cross through the traffic. Whether the customer's income is $2,000 or $30,000 (for Store No. 820 has both), Mr. Griffin deposits the package in her car, bows with dignity, and returns. Approaching his own windows his severe blue eyes note the displays that he arranged early that morning: a large pile of dark green Del Monte cans priced to meet the Grand Union cut five doors below; a case of Clicquot Club dry ginger ale—a fancy item; a coffee sale—Bokar for twenty-seven cents; a butter sale—thirty-seven cents a pound, undercutting all competitors in town except First National, which has met the price; Long Island ducks (Mr. Peck's department) for twenty-five cents a pound—a knock-out. The three windows, with chickens in the small center one, are about equally divided between A & P products and other products, except in the matter of coffees and teas. This spring the tea and coffee displays have been exclusively A & P. Mr. Griffin vanishes.

Behind his counter he knows all his usual customers by name, but converses with reserve. Not only does he look like a grocer in an advertisement, but his quiet ability has been recognized by A & P, who have made his store a training school for other managers. For this reason, and because his is a combination store, instead of receiving the average $50, Mr. Griffin's salary is probably considerably more. At present he is training a short man whose dark hair is graying around the temples. This responsibility is an honor to Mr. Griffin. It is also a chore, since the Fairfield staff must always include a transient clerk who will move along to some store in the county as soon as he is trained. There are six other clerks in the Fairfield store, none of them much above twenty. Each takes care of some eighty-nine customers a day (about nine an hour); but to this figure allowance must be made for time out at meals and for the rush hours when the store is crammed. Mr. Griffin is sincerely proud of his store, but his A & P activities are not confined to its threshold. A few weeks ago, with charcoaled face, Mr. Griffin was interlocutor in a minstrel show given by the A & P Managers' Benefit Association at Bridgeport, where Mr. Griffin has his residence. Just five years in the employ of the company, he is eligible to buy A & P common nonvoting stock, when and if more is issued, and his family is protected under the A & P life insurance system.

It is a matter of some concern to the more community-conscious citizens of Fairfield that both Mr. Griffin and Mr. Peck live in Bridgeport. Not only, they say, is the A & P profit taken out of town, but its two largest salaries are spent in the metropolis six miles to the east. Mr. Griffin and Mr. Peck are trained to take this hurdle also. The former arrives in Fairfield about half-past seven in the morning, unlocks the store, supervises the uncrating of newly arrived vegetables (which come from New Haven). He leaves the store about six o'clock at night, nine o'clock on Saturdays. Twice a week he stays late to fill out a vast sheet called a goods order blank. The sheet is so composed that the order may be filled at the A & P warehouse with the greatest efficiency. It is placed on a warehouse hand-truck labeled "820," and this moves past goods which are stacked in the same order as that in which the items are listed on the sheet. When the truck reaches the end of the order, it is at the end of the warehouse departments. The load of groceries is then transferred to a motor truck for delivery to Fairfield on Tuesdays and Fridays, arriving about eleven o'clock in the morning. The Atlantic Commission Company truck stops every day.

The life of Mr. Griffin is a series of visits by superintendents and assistant superintendents of this and that. The inspections are so frequent that they hold no terror; there is no last minute primping because the boss is coming. Every day an assistant superintendent, with a dozen stores to inspect, drops in; his immediate superior, the superintendent, visits Mr. Griffin about once a week. A sales manager and an advertising manager introduce new products, engineer spectacular sales, arrange for space in the Bridgeport newspapers, widely read in Fairfield. This Bridgeport advertising does well enough since the prices announced are identical everywhere in the 315 stores served by the New Haven warehouse. Opened in 1914, Store No. 820 has never advertised in the weekly Fairfield *News*, another hurdle which Mr. Griffin and Mr. Peck are trained to leap. Every month Mr. Griffin makes an inventory of stock on hand and tallies this against receipts. The daily receipts are deposited in the Fairfield Trust Company, withdrawn at regular intervals, cleared in New Haven, whence they are checked to Boston, central office of the New England division.

Within the screen door it is cool and the air smells of produce. Just beyond the entrance a square wooden pillar painted green is surrounded by three pyramidal shelves displaying the day's perishables. The shelves are divided into compartments about a foot and a half long, and on the bottom shelf oranges from seventy-nine cents to eighty-five cents a dozen occupy six compartments—the largest display. Likewise on the bottom shelf are onions in three compartments, apples in two, potatoes in two, cabbage and lettuce in two, nuts in one. Lettuce is expensive—two heads for a quarter. On the second shelf, smaller in circumference, are grapefruit, two for thirty-three cents, cantaloupes, bananas, an old battered cash register, vegetables. The top shelf is very small. On it are cucumbers, a couple of small pineapples (the main demand for pineapples is in cans), more grapefruit and cantaloupes. On the floor beside the post are two green wire baskets filled with lemons; three or four empty spinach baskets, one half-empty; a basket of green peppers, full; a basket of peanuts, full, and another half-full of apples. All this was deposited when morning was yet gray by a big red Atlantic Commission Company truck that glided in from the warehouse at New Haven and piled crates on the sidewalk. Much of the produce is bought from local farms. In the vicinity of his green pillar Mr. Griffin sells $400 a week; $66.66 a day, in vegetables and fruit.

Business is larger along the right hand side of the store, where five wide shelves are stacked with cans, packages, bottles, and jars. Near the front window pickle and relish bottles gleam. The leader in this section is catsup, whose various brands, including tomato-cocktail, fill six feet of shelf. Halfway down the store are stacked teas, particularly Mayfair, which is now being tried out at Store No. 820 and in other New England stores. When a new article like this is placed on the shelves, it is closely watched by Mr. Griffin and his superintendents, and it has to fight for its place. Mayfair is only about two months old, and its fate is not yet determined. Beyond the cash register are a couple of yards of canned milk—White House (canned by A & P), Magnolia, Borden's, Van Camp's. Canned milk is to the shelves along the wall what oranges are to the shelves around the green pillar. The topmost shelf, seven or eight feet high, carries a complete line of cereals. This unit of the store, including all canned goods and packages, together with the National Biscuit Company display near the front door, turns over $970 a week; $161 a day.

Set into the back wall of the store a large refrigerator contains butter, fresh milk, cheese, yeast. In front of the refrigerator is a second counter stacked with eggs, in boxes and loose. Near-by is a rack of brooms, a rack of garden seeds—both racks made somewhat inaccessible, on busy mornings, by the large piles of cardboard bakery boxes containing Grandmother's Bread, the empty boxes pushed aside in all directions. This is the "sales" corner, and on busy Saturdays it is not easy to follow the movements of Bokar cans, unpacked as sold, A & P Bartlett pears, or Del Monte peaches.

Detached features of the store are tobacco, located near the front, with a total weekly sale of $100, nearly 3 per cent of the business; a glass case built out from the main counter containing pastries; candy beside the cigarettes.

The following are Mr. Griffin's total sales (approximately):

	Weekly
Jars, packages, cans	$970
Produce, fruit, vegetables	400
Butter	265
Sugar	170
Coffee	130
Eggs	125
Bread	120
Tobacco	100
Soap	85
Milk (canned)	75
Flour	50
Tea	40
Total	$2,530

The turnover of Mr. Griffin's end of the

business is about $2,530 a week; along the left-hand wall Mr. Peck brings this total up to some $3,850 a week by doing a $1,320 butcher business. Mr. Peck is a kindly man with wrinkled face and spectacles. Since he is a trained butcher, his salary is likewise probably well over $50 a week, and he has two clerks, William Banyas and George Cole. Mr. Peck's emporium was formerly a butcher shop owned by Johnny McGarry. McGarry moved up the street to his present white-tiled store; his shop was annexed to the A & P, its walls torn down. That was three years ago. Mr. Peck's counter is of glass for the display of cuts, with those Long Island ducks a feature. Shelves on the wall toward the rear are stacked with canned fish, especially A & P salmon. Though high in rank, Mr. Peck is not officially the manager of the store. Responsibility for locking up, cleaning, and accounting falls upon the adequate shoulders of Mr. Griffin. Besides doing a major part of the business, Mr. Griffin's "sales" are larger and more complicated than Mr. Peck's. The sales and advertising managers at New Haven are constantly adjusting the price of his rice or arranging to turn over a larger amount of butter when butter is cheap. They must keep in touch with the prices of his competitors—Grand Union, First National (formerly Davey Brothers), and Logan Brothers—on canned asparagus, tomatoes. Consequently the store's windows are more important to him than to Mr. Peck, and not content with the window on the grocery side of the store, he overflows into Mr. Peck's window quite at random. Mr. Peck is left with a little window between the two doors, where chickens are hung and bright cards daily announce the prices of the meats.

Corbit
A. B. PECK AND THOMAS F. GRIFFIN, GENIAL, EARNEST EXECUTIVES OF A & P STORE NUMBER 820, IN FAIRFIELD, CONN.

The gross business of Store No. 820 is $1,500 more in summer than in winter. This is not only because of the tourists and picnickers, but because its largest customers are persons who winter in New York City and do not appear at their estates in the vicinity of Fairfield until spring.

. . .

This is an old town, settled in 1639 amid the burning of witches. The British burned it in 1779. Fairfield citizens are proud of their history to the point of shifting the Post Road away from their old church and village green in order that clattering Main Street might not disturb their dreams about their ancestors. Nevertheless, with the help of the factories and the city of Bridgeport, to which Fairfield is practically a suburb, Main Street has done just this. The chains are capitalizing on Main Street, not only from the extremely rich and the extremely poor, but from middle incomes of $5,000 or so, whose earners commute from Fairfield's suburban homes to Bridgeport or even New York. The town's growth has been from agriculture through industry to real estate. Development of suburban real estate, now the Fairfield phase, has added 6,000 to the population in ten years.

However, between the housewife and her grocer there is a subtle link—the husband. He will comment on the food; he will pay the bills. Between the housewife and Mr. Griffin of Store No. 820 this link is missing; she carries money in her purse that is apparently her own, while Mr. Griffin is unable to offer her anything of especial tastiness, chosen with pride by himself. It is by the preservation of this link that the two big independent stores in Fairfield thrive: Mercurio's, the luscious Italian grocery; McGarry's, the old traditional meat market. In a sense neither of these stores is competing with Store No. 820, because their stock is of a deliberately superior kind. While A & P is displaying canned peaches Mercurio's devotes a whole window to nonalcoholic vermouths. Mercurio's asparagus is dear, but it is green almost to the very end. At McGarry's you will find the finest, most expensive cuts of meat. Epicures are inclined to go to the chains for their staples and to run up prodigious bills for luxuries at these more fashionable independents. Besides the epicures and the careless rich, the independents do well with the conscience trade. Every man engaged in a business that touches the town retailers must trade with the independent merchant. Edward Brennan, publisher of the Fairfield *News*, and Howard Comstock, its editor, not only trade with the independents, but also put in a good editorial word for the

BECAUSE SHE BUDGETS, MRS. CARLETON H. PALMER, WIFE OF THE PRESIDENT OF E. R. SQUIBB & SONS, BUYS AT A & P

Courtesy Bridgeport Post
SELECTMAN FREDERICK A. BURR WILL RULE FAIRFIELD AS LONG AS HE LIVES AND LIKES

MR. AND MRS. DONALD PERKINS SHOP WHERE THEY CAN GET THE MOST FOR A DOLLAR—THE A & P

policy of buying from the locally owned stores. This paper waged an antichain "trade with your own taxpayer" campaign two years ago.

Johnny McGarry has a good trade. As Postmaster William Gould says, he could carry on very well with the accounts of Walter B. Lashar (American Chain Co.) and the Jennings families alone. There are fewer Jenningses in Fairfield than Cheneys in South Manchester, but their paternalism is the same in quality, and they are rich. O. G. Jennings, who was born in Fairfield, made his money in Standard Oil. He has been a McGarry customer ever since he married. Likewise his son Lawrence, whose wife is the daughter of Witherbee Black (Black, Starr & Frost-Gorham). Besides these big accounts, McGarry has Mrs. Charles Le B. Homer (sister-in-law of Owen J. Roberts); Robert H. Leach, vice president of Handy & Harmon.

Mercurio's grocery is first class, with a great display of fat fruit and vegetables in front of it, and many chauffeurs crossing in and out. It opened some thirty years ago, with the family living above and the innumerable children spilling over into the shop. Two years ago the business was formally turned over to four children—Dominic, Frank, Sally, Jimmy—all under thirty. Sally is the boss, Dominic is the president and drives one of the five trucks. He continues to drive because he is known to housewives in that capacity. Mercurio faces are entirely irresistible. They have for customers, among others, Mrs. George Waldo, wife of the editor of the Bridgeport *Post and Telegram;* all the Sturges families—Henry S., Frederick, Clarence B. (and his smart Tide Mill Tavern, which is a plum to any tradesman); the Jenningses; Mr. Jennings' sister, Mrs. Hugh D. Auchincloss; the Warners (corset manufacturer at Bridgeport); the country clubs; the Standard Oil Bedfords; Horace B. Merwin, Bridgeport banker and president of the Fairfield Trust Company.

Corbit
THE MERCURIO "CHILDREN"—SALLY, JIMMY, FRANK AND MRS. DOMINIC—SELL TO THE EPICURES, THE CARELESS RICH

It would be convenient to be able to divide the buying public of Fairfield into two groups: this distinguished, die-hard society which clings to its extravagant independents, and the penny-wise middle and lower classes patronizing Messrs. Griffin and Peck. Convenient, but untrue. For A & P straddles Fairfield as indiscriminately as the postman. Among Mr. Griffin's customers, for example, are:

Mrs. Carleton H. Palmer, former president of the National Junior League, wife of Squibb-President Palmer, active citizen of Fairfield, interested in the cultural life of the town. Store No. 820 offers everything she needs at prices within her budget. Her only complaint against the A & P is that it does not buy its vegetables from Fairfield truck gardeners whenever possible (in season). Vegetables for Store No. 820 come from truck gardens near the New Haven warehouse; but in general Mrs. Palmer roots for A & P and does all her shopping there. At the first of every week she deposits a budgeted sum of money with Mr. Griffin, and her chauffeur collects her daily orders. Mrs. Palmer does not believe in charging things. She thinks Macy's is the most marvelous store in the United States.

Mrs. Donald Perkins, whose husband is a special representative for *Standard Statistics,* says that she must shop where she can get most for her money. That is, she finds, at Store No. 820.

Selectman Frederick A. Burr, who, like Napoleon, is first selectman with two other selectmen under him, rules Fairfield with the unofficial title of "mayor." He shops all about town, affably including both chain and independent, and is inclined to prefer Logan Brothers and First National to A & P, because the two former derive from Bridgeport. Nevertheless, he drops in on Mr. Griffin now and then. His only comment on the competition between chains and independents is directed against Mercurio's, because it keeps open all Sunday. " 'Tisn't decent."

Charles H. Munson, vice president of the Air Reduction Company.

WILLIAM GOULD, POSTMASTER, ADMIRES CHAIN STORES, WITHDREW FROM GROCERIES IN 1915

HOWARD COMSTOCK, YOUNG EDITOR, EXHORTS CITIZENS TO BUY FROM TAX-PAYING CITIZEN-TRADESMEN

JENNINGSES SUPPORT ALL TOWN ENTERPRISES. MRS. LAWRENCE K. JENNINGS IS A CUSTOMER OF McGARRY AND MERCURIO

EMERY NEMECZKY, 290-POUND HUNGARIAN, GIGANTIC GARBAGE MAN

Arthur R. Womrath, of the circulating libraries, who sends his chauffeur.

Emery Nemeczky, who burns Fairfield's garbage behind his own little farmhouse for $100 a month. Emery is a gargantua who arises at 4:30 in the spring, plows gardens until dusk, when his horse is exhausted. He weighs 290 pounds, and as he plows his hand merely rests on the handle. He moves with a jovian majesty. He accumulates money, holds mortgages, and will trade with no one but the chains. He gets wistful about wealth. "Even if I plow the whole world, I never be *really* rich."

• • •

Postmaster Gould best expresses Fairfield's attitude toward chains. He withdrew without bitterness from the grocery business in 1915, foreseeing that chains were inevitable, economically sound, that the A & P was only the beginning of the invasion of non-civic stores. He points out that in the 1880's Fairfield was initiated to the Smith chain, called the Village Stores and started near Bridgeport by George Gilman for his adopted son, G. W. Smith. It is a fact to remark that this same George Gilman was co-founder of A & P with old George Hartford on Vesey Street. Whether the Smith-Gilman combination was imitating Hartford, or whether Hartford was imitating Smith in establishing grocery chains, history does not relate. Fairfield buys nevertheless and is still talking about millionaire George Gilman, his fabulous house, his legended women, his tallyho.

The A & P Company as a Whole

Its 15,500 stores; its three Brobdingnagian subsidiaries; its dedicated cows; its rich, modest Hartfords.

THE Great Atlantic and Pacific Tea Company is a billion dollar business. Which is to say that last year, like Ford, General Motors, U. S. Steel, Swift, and a very few others, its gross sales amounted to more than $1,000,000,000. The Great Atlantic and Pacific Tea Company, largest chain organization in the world, has 15,500 stores which dispense about one-fifteenth of the food sold by retail stores in the United States. Its little red shops whose black signboards always bear the gilt lettering

THE GREAT ATLANTIC AND PACIFIC TEA COMPANY

reported a net profit last year of $26,219,631. Its volume of business is ten times that of Liggett and twelve times that of United Cigar. Add Sears, Roebuck to Montgomery Ward and then include J. C. Penney—the total of business will be $100,000,000 less than the Great Atlantic and Pacific Tea Company total.

But the truest token of gianthood has not yet been revealed. It is this—the Great Atlantic and Pacific Tea Company makes just 2.49 cents on each dollar of sales. No other contestant, pigmy or elephantine, in the retail field can make so few cents and still call its business profitable. Swift makes only 1.5 cents on the dollar, but Swift is principally a wholesaler. [FORTUNE, February, 1930.] Ford, popularly supposed to have the nethermost profit rate, makes 7 per cent on sales to dealers; General Motors makes 17 per cent. Yet the Great Atlantic and Pacific Tea Company aspires to reduce its rate to $.0225, possibly to $.02. That would be budgeteer's Utopia.

When throughout the United States no issue, except prohibition, is more violently discussed than the Chain Store issue, it is natural the A & P, by all odds the biggest chain, should be the most savagely attacked. Popular small-town outcry defines the issue as Chain Store vs. Independent. And on this line Mr. Henderson of Shreveport, Louisiana, has erected his Ku-Klux-Klan-like antichain organization. But this is *not* the way that Big Business defines the issue. For Big Business the issue has an entirely different definition. For Big Business, the issue is Chain Store vs. Manufacturer or Chain Store vs. Wholesaler. Specifically it becomes A & P vs. General Foods, or A & P vs. California Packing Corp., or A & P vs. Any Number of Others of our Hugest Corporations which deal in commodities or branded articles. Big Business may well define the issue so. For A & P has been a fierce economic opponent. Whenever it could not buy from other huge corporations the things it wanted at the price it considered fair, A & P has gone out and produced or assembled these things itself. Hence, quite as exciting as its 15,500 stores are its innumerable fisheries, canneries, bakeries, or the innumerable cows and hens whose lives are completely dedicated to A & P.

Thus it is that an understanding of this giant company must begin with its three great subsidiaries. Each a giant in itself, they are:

The American Coffee Corp.
The Atlantic Commission Co.
The Quaker Maid Co.

The American Coffee Corp. is the largest coffee concern in the world, the only one controlling coffee from Brazilian tree to U. S. housewife, and it accounts for nearly 60 of the 1,000 million dollars which A & P takes in every year. It is described on page 48.

The Atlantic Commission Co., world's largest buyer of fruits and vegetables, makes A & P the supreme Master of the American Map. Of this, more later.

Brobdingnagian maid

It is perhaps through the eyes of Quaker Maid that we can best visualize the magnitude of the Brobdingnagian picnic which A & P is daily preparing for this nation (A & P feeds, of course, the equivalent of many complete nations). Quaker Maid has, for example, salmon. That is, they are hers when her own fishermen catch them on Alaskan mornings and her machinery squeezes them into cans on Alaskan afternoons. One plant cans 70,000 fish a day. A & P sells 26,000,000 cans a year, half of them supplied by A & P's own Quaker Maid.

A scattered herd of 75,000 cows in Wisconsin, carefully chosen but not owned by Quaker Maid Co., supplies two huge canning factories where over 130,000,000 cans of evaporated milk are packed each year. In 1921, before A & P had begun to can milk, a customer in an A & P store could buy eight cans of evaporated milk for a dollar. Of this, twenty-seven cents represented raw milk; and the farmer's profit, manufacture, distribution costs, and profits took up the seventy-three cents. Now, if the consumer asks for White House milk he gets twelve cans for a dollar—fifty-two cents' worth of milk plus farmer's profit, and forty-eight cents for distribution and manufacturing costs and A &

P's 2.49 cents profit.

In Brooklyn a vast Quaker Maid factory packs a vast assortment of foods: 72,000 pounds of jams and preserves ooze into jars every day; 70,000 pounds of cereals; and hundreds of thousands of pounds of baking powder, rice, lentils, and split peas are put into dated paper packages every day. Veritable conduits of mayonnaise, vats of olive oil, cauldrons of pickles and cauliflower (for relish) are jarred. The Brobdingnagian picnic preparations also include hundreds of pounds of noodles, miles of spaghetti, hundreds of pounds of mustard, peanut butter, maple syrup, extracts, cocoa, candy, spices, and ammonia. In Terre Haute, Indiana, a similar factory pours out a similar assortment of foods and adds to it a daily production of 10,000 cans of baked beans.

Yet Quaker Maid's deluge of food, amounting to some $25,000,000 a year, accounts for only a small per cent of A & P's total. At least two-thirds of the shelf space in an A & P store is dedicated to nationally advertised, better known brands like Del Monte canned foods and Blue Ribbon mayonnaise. Quaker Maid products act as a reserve to the national market.

Butter, eggs, bread

Besides what it gets from its three great subsidiaries and besides what it buys from other manufacturers, A & P has other making and assembling activities of its own. For example: butter, eggs, bread.

A & P owns no dairy, but selects its Wisconsin sources of butter, supervises and inspects them regularly. Largest butter dealer in the world, A & P sells over 130,000,000 pounds annually. It is excessively vain of this product, for it pays one-half cent more than necessary to assure itself of good quality. Every grocer knows that his reputation depends chiefly on the quality of his butter, eggs, and coffee.

If every person in New York City were a hen and laying regularly, there would not be enough eggs to fill the A & P demand. The 7,500,000 supplying A & P hens are not owned by A & P. Buying is done directly from carefully selected farmers who sell their whole output to A & P.

Every hour of every working day some 153,717 loaves of Grandmother's Bread are sold across A & P counters. This amounts to more than 500,000,000 a year, baked in thirty-three widely distributed A & P bakeries, after the direct purchase from the mills of 5,000,000 barrels of flour. A Federal Trade Commission study tends to show that A & P (and other chains who do their own baking) sells bread to the public for less than the average baker can sell it to the retailer.

Man named Hartford

Butter, eggs, bread, salmon, jam, pickles, rice, oil, noodles, mustard: surely there is some place where the wearied mind may come to rest and find coherence. There is. There is a man named John Hartford. He is the son and heir of the Founder. He is the only man who has complete authority over the incredible, inconceivable, unimaginable activities of the A & P which seem, to the unthinking customer, so simple, so commonplace. He has a brother named George, less active than he. He lives in a vast, wooded estate at Valhalla, New York. And that is all that is known about him, except that he is pleasant to talk to. And except that he must be one of the really richest men in the United States. For last year (as similarly in other years) there must have gone to his credit a great part of A & P's $26,000,000 net profit. For if it did not go to him, then to whom did it go? The A & P company has 2,000,000 common shares outstanding. Of these only 120,000 have seeped out to the public (via the Curb), and some 240,000 have gone to employees, leaving more than 1,500,000 shares or three-quarters of the company in the hands of—whom? Presumably the Hartford family. Even if this family owned only a third of their company, it would be necessary to talk of Rockefellers, Fords, Mellons, before you could be sure you had named richer men.

THE MEAT AND PASTRY CORNER OF THE APOTHEOSIS OF ALL A & P STORES AT ARDMORE, PENNSYLVANIA

The immensity of A & P finds center and unity with John Hartford. But quite as extraordinary as that one of the greatest enterprises in history should be controlled by an Unknown is the fact that the origin of this enterprise lay in a product of secondary importance. The late John Hartford's father began with tea.

Tea & history

In 1859, in the days of John Brown of body fame, tea was selling for $1.00 a pound. This outrageous price induced George Gilman, a leather merchant located in the Swamp of New York City, to buy a cargo. He hired a store at busy 31 Vesey Street, stocked it with the tea, and added some coffee and spices. The humble façade he painted red. His partner was a young chap named George Huntington Hartford. This man Hartford saw farther than Gilman; he soon bought out Gilman's interest, popularized the store by the use of premiums—gaudy china, glassware, crockery. Then he induced ladies to form clubs and pool their premium coupons.

Clubs sprouted as far away as New Jersey, and this led Hartford to open a new store for the convenience of outlying club members. He found he could operate two stores as easily as one. It became apparent that if he had more outlets, he could sell wholesale tea in five-pound packages; by 1867 he had conceded to selling one-pound packages, always at wholesale prices. This was undercutting other retailers about $1.00 a pound. Hartford already had the idea. In *Harper's Weekly* for May 11, 1867, he advertised in dreadful hodgepodge type: "The proprietors of the Great American Tea Company became fully convinced, several years ago, that the consumers of tea and coffee were paying too many and too large profits . . . and therefore organized the Great American Tea Company to do away, as far as possible, with these enormous drains upon the consumers." He then proceeded to list eight profits between China and the American consumer and claimed to eliminate them.

From this beginning the chain store principle developed very rapidly. By 1876 there were sixty-seven so-called "branch retail houses . . ." Eighteen of these were in New York City, four in Philadelphia, three in Chicago. Stores farther away were those at Rochester, St. Paul, St. Louis, Indianapolis, Louisville, and Baltimore. But it took many years for Hartford to get rid of the tea merchant idea. Other items were added cautiously, and the company's growth was retarded by an elaborate delivery system. Still, the "economy" policy of making little percentages on a swift turnover (A & P net working capital of $84,588,509 turned over twelve and one-half times last year for a gross business of $1,053,000,000) was deeply appreciated in the boisterous days of Fisk, Gould, and "the public be damned." Mr. Hartford continued to expand, continued to add staples, and by 1910 owned 372 stores. In 1912, when he had 447 stores, he instituted the cash-and-carry system and began to grow in very earnest. When the War broke he was in the thousands; when the Armistice was signed A & P owned 4,000. But old Mr. Hartford died in 1917 without reaching the Pacific Coast.

He had founded, as above noted, the greatest coffee concern in the world. But he had not made the United States drink tea. The Great Atlantic & Pacific Tea Co. is proud of its tea business. From the auctions at Ceylon

it buys huge quantities. But, unlike Sir Thomas Lipton, it does not own its own tea gardens. And whereas the Britisher drinks nine and one-half pounds of tea per capita, the Australian eight and one-fourth, the Irish seven and one-half, the Canadian five, the U. S. citizen still drinks only seven-eighths of a pound per capita.

The billion dollars

In fact, if you split up into rough divisions the billion dollars' worth of food which A & P sells yearly, tea comes at the bottom of the list. Here is the breakdown, roughly estimated:

Jars, packages, cans, misc.	$320,000,000
Fruits and vegetables (fresh)	150,000,000
Meats (in about 3,000 of the 15,500 stores)	100,000,000
Butter	75,000,000
Sugar	60,000,000
Coffee	60,000,000
Eggs	50,000,000
Bread	45,000,000
Tobacco	40,000,000
Soap	40,000,000
Milk	25,000,000
Flour	25,000,000
Tea	10,000,000
	$1,000,000,000

To get all this food and drink to the right place at the right time so that each of the 5,000,000 families will daily make its sixty-five-cent purchase, is, needless to say, a triumph of organization, for which, in a war, all the orders of all the crowned heads would be pinned on somebody's breast. Among the phases of this organizing triumph, great is the synchronization of coffee (see page 48). But greatest of all, perhaps, is the triumph of the aforementioned subsidiary: Atlantic Commission Co.

Master of American Map

It is first of all a buyer, choosing fresh vegetables from truck gardens all over the country. It often becomes a packer and shipper; but where growers' coöperatives exist, as in the case of oranges (Sunkist in California; Sealdsweet, Blue Goose, Indian River in Florida), the company buys goods already packed. It then becomes both consignor and consignee, shipping carload lots to its various warehouses, specially equipped with refrigerating and heating devices, and corresponding geographically to fifty-two A & P warehouses. The two sets of warehouses are seldom under the same roof, but almost always in the same cities. The vegetables are transferred from the freight siding to the commission company's warehouse, where the chameleon-phœnix is broker, commission merchant, jobber, wholesaler. The food is sorted, the orders of individual stores are filled, charged, consigned, loaded on trucks which deposit them at the A & P stores in the morning before the manager's alarm clock has stopped ringing.

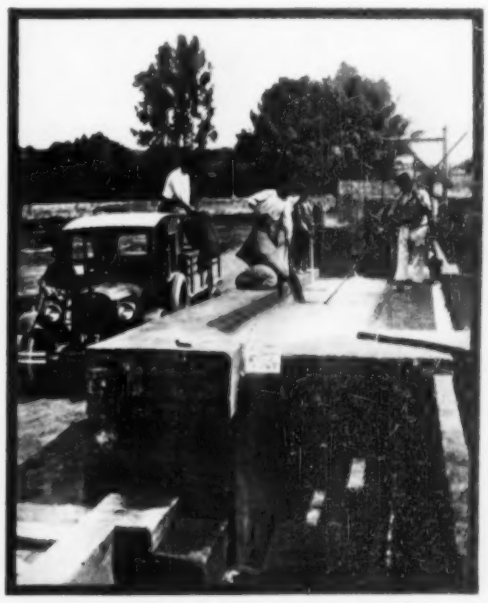
In its intense desire to eliminate unnecessary profits on goods between the field and the shelf, the Atlantic Commission Co. has mastered the great American garden. Unless the difference in season requires it, potatoes from the Kaw Valley of Kansas are not shipped to Grand Rapids where potatoes grow; nor are onions from near Grand Rapids shipped to Dallas, where onions are plentiful. By shifting vegetables around, a continuous supply of them is obtained throughout the winter, but theoretically Dallas onions supply the southern division only. Each A & P division of the American garden is self-supporting to an amazing degree, in its season. But items like the sleek green watermelons of Georgia and Florida, the great shaggy potatoes of Idaho, the lazy tomatoes of western Tennessee and Arkansas, the Oregon broccoli, the princely Oregon apples, the sturdy New England apples about which Robert Frost rimed, and the bitter cranberries of the Massachusetts cape are examined, purchased, and shunted around the country in an economic strategy of which Nature never dreamed.

The Atlantic Commission Company may perform miracles of distribution; the American Coffee Corp. may be wonderful in scope and scale; the Quaker Maid Co. may perform incredible conjuring with bottles and tin cans. But these cannot detract from the awesome achievements of the parent company. Its various feats demand various tributes, but in the staggering international task of assembling and consigning all its imports and domestic staples it has earned another title—Master of the American Map. In the final estimate, and no matter how sensitive one's ears may be to hyperbole, the name of the Great Atlantic and Pacific Tea Co. can by no means seem too grandiose.

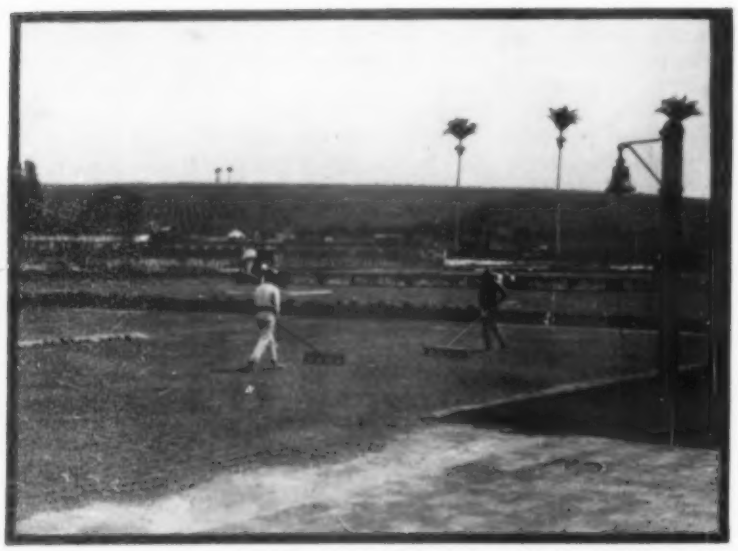
Mainly it has become what it is simply by growing—one little store after another. But there was one year, 1925, when the giant took special cognizance of its size and shaped itself into its present form. In that year was formed the great produce subsidiary which we have described. And about that time, the management of the stores was divided into geographical divisions. These autonomous divisions, subject only to the Hartford rule, have headquarters at Boston, New York, Pittsburgh, Detroit, Chicago, and Philadelphia (for all the South). Only this year a new nucleus began in Los Angeles. There is still a huge geographical gap: the Great Basin (from Kansas to California) is peopled with many another chain, but not A & P. At the head of each division and of various central activities, there are, of course, a great number of skilled merchants and organizers. It is notable that nearly all have risen from the ranks. Of the six divisional presidents, four started in white aprons, one as an errand boy without even an apron.

Also, from about 1925 may be dated another change. Beginning then, stores were remodeled, enlarged, moved to more economical locations and, above all, adjusted to their communities. Thus, in Ardmore, Pennsylvania, "richest township in the United States," an A & P *de luxe* store has been developed with fluffy pastry, caviar, crabs, wicker furniture. Except for its red façade, the Ardmore store bears little resemblance to the A & P at Second Avenue and Twenty-second Street, New York, or even to that at Fairfield, Connecticut, which is described in minute detail on page 41. So, to its basic principles of price reduction by rapid turnover and the elimination of middle profits, A & P has added another: adjustment to the public taste. It would not be surprising if the skillful execution of this policy became the source of its greatest strength. Not only in its competition with the Independent. But the manufacturer may discover that if A & P becomes Master of the American Taste as well as of the American Map, then A & P's terms become, practically, Economic Law. And, doing unto others as it would be done by, A & P may graciously permit the manufacturer to make 2.49 cents on the dollar, even as A & P.

SHEEP DISCOVERED THE STIMULATING QUALITY OF THE COFFEE BEAN

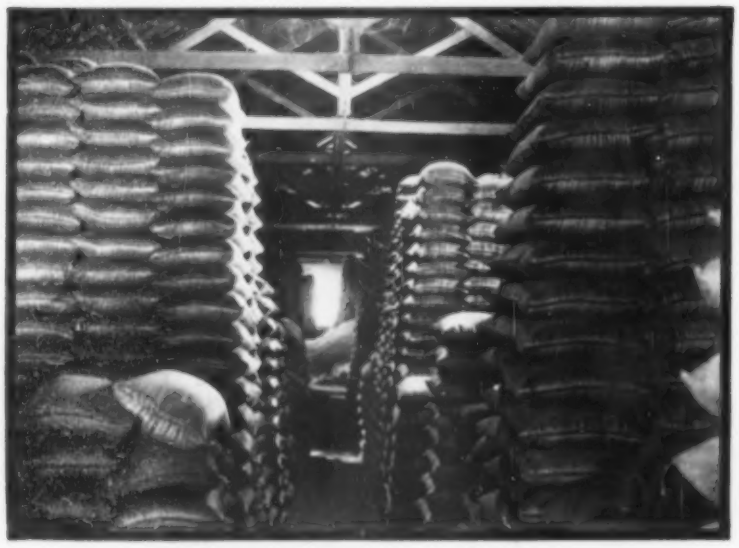


STONES AND DIRT SINK. BERRIES FLOAT OVER THE DAM-LIKE OPENING



FROM FIFTEEN TO TWENTY-FOUR DAYS THE COFFEE LIES IN THE SUN, IS RAKED AND STIRRED REGULARLY

INTO EACH BAG ARE PUT 132 POUNDS OF COFFEE, WHICH THEN GO TO A WAREHOUSE TO WAIT FOR A BUYER



BRAZIL IS ALMOST BURIED, ECONOMICALLY, UNDER THOUSANDS OF BAGS OF COFFEE

A & P Coffee

Is the *only* coffee bought from producers and sold to consumers by a single company.

THE A & P is the greatest coffee merchant in the world. And to be the greatest coffee merchant in the world is to stand at the center of the food industry. Any grocer will tell you that the three basic commodities in his store are eggs, butter, and coffee. If the eggs are good and the butter is good and, above all, if the coffee is good, the customers will return for more. And they will take the canned soup and the noodles with them.

Last winter A & P customers began buying coffee in quantities theretofore unknown in the trade. They bought 1,000,000 pounds a week more than they had been buying—an increase of 30 per cent in the sales of the company. They bought not only *Eight O'Clock* (A & P's lowest priced) and *Red Circle*, but *Bokar*, the pride of the roasting plants. And they kept on buying.

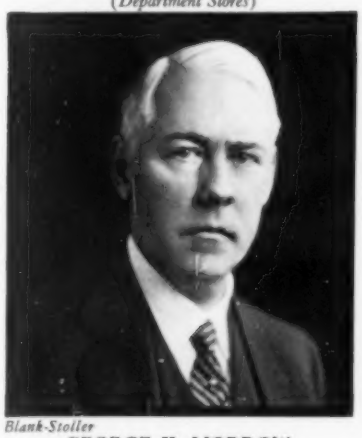
The reason was not that A & P's coffee-tasters had developed more subtle palates and a more delectable brand. But simply that the price of A & P's coffees had fallen because the A & P promptly gave the public benefit of the falling market prices. And the reason for that was Brazil.

Back of this spectacular price cut was the threatened tragedy of an entire people, and its purpose was not to absorb the coffee trade (though A & P has no reluctance to an increase in its own sales) but to sell more coffee. It was, and it still may be, the conviction of Mr. Berent Friele, president of the American Coffee Corporation, subsidiary of A & P, that the consumption of coffee in America could be increased, that lower prices would increase it, and that greater exports at lower prices would take the strain off the warehouse girders and the bank statements of Sao Paulo.

What had happened in Brazil had been happening for a long time—since 1888 to be exact. No one knows when coffee came to South America. Legend in Brazil has fixed upon the year 1727. It was in that century that the shrub, which first came to human notice through its power of intoxicating sheep, was transported from Batavia to Amsterdam and to the Jardin des Plantes in Paris. It came to the new world by way of Martinique and French Guiana. And it quickly established itself in the state of Sao Paulo in Brazil. In 1888, with the abolition of slavery in that nation and the importation of cheap labor from Italy, trouble began. There were shortly 40,000 plantations, crops increased, prices declined. By 1925, overproduction had reached such a point that the Sao Paulo Coffee Institute was created to store coffee in the interior at the planters' risk and lend money to the planters on the security of warehouse holdings. But though the market steadied for a time, the carry-over after the 1927-28 crop was 11,672,000 bags (half the world consumption for a year); and the 1929-30 crop was estimated in the fall of 1929 at 22,000,000 bags with a carry-over as of July 1, 1930 of 18,000,000 bags. Which meant that the planters could not be paid for the 1929 crop for almost two years and that $315,000,000 worth (at the then price) of coffee was tied up with loans on much of it at 9 per cent.

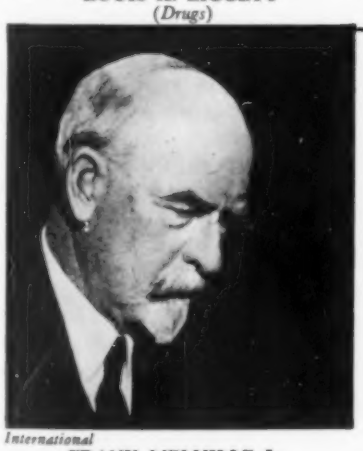
Consequently it was not altogether wonderful that the Sao Paulo coffee market collapsed after the stock market break in New York. The Secretary of Finance of Sao Paulo and head of the Coffee Institute resigned, rumors (which were rumors) were circulated in New York to the effect that the banks in Sao Paulo had refused further loans, and the renewal of a large English loan to the State was in doubt. At this juncture J. Henry Schroder of New York, Baring Brothers of London, and Rothschild of London agreed to underwrite a $97,330,000 bond

Cameragrams
JAMES CASH PENNEY
(*Department Stores*)



Blank-Stoller
GEORGE K. MORROW
(*Cigars, Cigarettes*)

Underwood & Underwood
LOUIS K. LIGGETT
(*Drugs*)



International
FRANK MELVILLE Jr.
(*Shoes*)

issue secured by 16,500,000 bags of coffee in Brazilian warehouses valued at $198,000,000. The Coffee Institute hands over its authority to the bankers on July 1, 1930, the world is to drink more coffee, and the Brazilian planter is to grow less and ultimately the price of coffee is to find its natural level.

But in the meantime and until the bankers take control, the price of Brazilian coffee is low. And it is this collapse in value which is reflected in the A & P stores. The American Coffee Corporation is the only coffee dealer which purchases its own coffee in South America, imports it, roasts it, and sells it itself. It has twenty-seven offices in Colombia in direct contact with planters and in a position to supervise crops; in Brazil, where coffee can legally be released for export at only two points, Rio de Janeiro and Santos, it has buying offices at those two points and attempts through them a certain direct contact with the planters. A & P purchases directly in the belief that it can thus secure personal supervision of grades and the maximum of economy. General Foods (Maxwell House), Chase & Sanborn, etc., purchase through local brokers who are constantly in the market, in the belief they can buy at least as inexpensively in that way. The difference is one of business judgment and practice.

A & P at once began to buy cheaper coffees and ship them to New York, Boston, and New Orleans, from which points the green coffee is carried directly to its eight roasting plants. To avoid two separate transportation charges (dock to plants and plants to storehouses), A & P has induced the railroads to publish regulations by which a through rate for coffee applies from port to warehouse with a stop-over privilege for roasting in transit.

And the cheaper coffees were put on sale. *Bokar* dropped 30 per cent and *Eight O'Clock* and *Red Circle* dropped accordingly. All these brands were sold at 15 to 20 per cent below the prices charged by competing brands of comparable quality. And A & P coffee sales soared.

The reason for the difference in price is not far to seek. A & P are retailers of coffee as well as roasters of coffee. Maxwell House and the rest are roasters only and retail, *inter alia*, through the A & P. In accordance with the time-honored custom of grocers by which coffee is the bait for other sales, A & P were willing to forego their roaster's profit, take their retailer's profit alone, and dazzle the world with cheap coffee.

Whether A & P will be able to continue to lead all its competitors in volume of sales depends ultimately on the answer to the question whether the coffee market has reached saturation point. If it has (and A & P is the only house to announce an increase in consumption since the break in prices, leaving it open to ask whether that increase has not been made at the expense of other brands) and if production remains where it is in Brazil (and it is easier to suggest the burning of trees than to decide whose trees are to be burned), then cheap coffee may have come to stay.

The real difficulty of comparing A & P and, say, Maxwell House is that as a coffee manufacturer, A & P is and always will be a grocer. And to the grocer coffee isn't coffee. It is the gate to soup.

Cameragrams
H. T. PARSON
(*Five & Ten*)

WILLIAM A. BARBER
(*Restaurants*)

ELISHA WALKER
(*Banks*)

ISRAEL LATZ
(*Beauty Shops*)

A & P, with its 15,500 outlets, is the biggest chain in the biggest of all U. S. businesses—food. But chains are ubiquitous. On this page are pictured eight executives of the biggest chains in various retail businesses:

J. C. Penney Co.	1,430 department stores
United Cigar Stores Co.	1,020 United-owned cigar stores
	2,000 agencies in drug stores, etc.
Drug Inc.	149 Whalen drug stores
	65 Neve " "
	56 Happiness (candy and soda fountain) stores
	16 Mirror " " " "
	669 Liggett drug stores in United States
	860 Boot " " England
	37 Liggett " " Canada
	10,000 agencies in United States
Melville Shoe Corp.	503 outlets—John Ward, Thom McAn, Traveler, Rival
F. W. Woolworth Co.	1,825 five and ten stores in United States, Canada, and Cuba
	375 " " " " in England
	47 " " " " in Germany
Childs Co.	113 restaurants from coast to coast
Transamerica Corp.	240 banks
Seligman & Latz	103 beauty shops in U. S. department stores.

Diamond in the Rough

Now comes Swedish Match, led by the brilliant Ivar Kreuger, to further complicate Diamond Match Company's problem.

"YOUR company's ten-year agency contract with the Swedish Match Company . . . expires December 31, 1930 . . ." Thus William Armstrong Fairburn to his stockholders last March.

" . . . the company is preparing for the manufacture in the United States of part of the matches heretofore imported from Europe . . ." Thus Ivar Kreuger to *his* stockholders in May.

Behind the dry formality of these statements can be detected an exceedingly alive situation. Mr. Fairburn and Herr Kreuger have been business associates for the past ten years. Mr. Fairburn is president of Diamond Match. Herr Kreuger is president of the gigantic $350,000,000 Swedish Match Trust, which sells matches and lends money to half the nations of Europe and to not a few outside of Europe. Mr. Fairburn and his company have been selling in this country the excellent safety matches made in Sweden by Herr Kreuger and his company. So efficient an agent has Mr. Fairburn been that today we import from Sweden practically our entire supply of safety matches. This agency agreement, it appears, is to be either terminated or largely restricted, and Swedish Match, through its subsidiary, the International Match Corporation, is to set up its own plants in this country. Thus one dog more will jump into the dog fight that is today the match industry.

Dog fight

Swedish Match would be a very large dog indeed to enter the fight. It would dwarf Diamond as Diamond dwarfs its American competitors. At present Diamond surveys its less responsible competition with somewhat the disdain that a mastiff shows for a snarling pack of mongrel curs. It deplores the irresponsible tactics of the fly-by-night, hole-in-the-wall matchmakers that spring up, flourish, and go out of business with distressing regularity. And the curs, in turn, snap back at the insolent might of Diamond with price cuts and underselling. They are not all curs, of course. A notable exception is Ohio Match, a pioneer in the air-conditioning system that enables modern match factories to operate summer as well as winter. Another is the newly formed Union Match which capitalized at $1,000,000, is already one of the big paper matchmakers, and will move into a new factory this July, and there are others. But many of the twenty-five U. S. matchmakers are small, opportunistic most dangerous to the industry's stability.

Twenty-five does not appear to be an excessive number of manufacturers, but it is too many for the match industry. Match machines are too prolific: one of them, not exceptional, can turn out 6,000,000 matches a day. So prolific are the machines that the manufacturers have a combined capacity equal to two and one-half times the actual consumption. Diamond alone could keep the country in matches. Though the machines are expensive and the field overcrowded, there are seven more matchmakers today than there were in 1925. When one adds to this the increasing threat from foreign competition (imports rose from about 5,000,000 gross in 1928 to 10,000,000 gross last year), one has roughly sketched an industry in which the competitive struggle is rapidly taking on the air of a dog fight.

A year ago a laudable effort was made to restore some semblance of order to the fight. The American Match Manufacturers Association was formed, with Diamond participating in but not leading the movement. A Will Hays-ian code of ethics was drawn up and subscribed to by twelve of the twenty-five American producers. But hard times came in the industry early this year, and the code cracked, groaned, and finally crumbled under the strain.

Retreat from Moscow

From this unprofitable hurly-burly Diamond is very sensibly beating a retreat. Its salesmen have long carried a line of toothpicks and clothespins along with their matches. Lately they have added Diamond golf tees, food containers, waxed paper, and even toilet paper (Softex and Ambassador). Diamond saws fence posts, structural lumber, as well as toothpicks out of its large timber tracts in California, Maine, Idaho, and other states. It owns forty lumber yards in the Sacramento Valley alone. Some $3,500,000 of investments in foreign match companies also softens the rigors of the retreat from the Moscow of matchmaking. Such outside activities have enabled Diamond to maintain of late years its honorable record of forty-one years without passing a dividend. Thus it comes about that Diamond, by far the largest and most powerful of American matchmakers, derives about 70 per cent of its income from other sources than making and selling matches. Thus, also, it comes about that Diamond's gross, slipping from $4,175,000, was yet above $3,000,000 in 1929.

The match

Foreign.—The safety match, thanks largely to the solvency of the Swedish Match Company and the insolvency of many a national government, is the only type of match used widely abroad. Sweden has a peculiar hold on the safety match; one Lundstrom invented it, and the great forests of Sweden are ideal sources of raw material. The Swedish aspen is so much superior to the American that almost no safety matches are made in this country, although Diamond makes a few—"for prestige and patriotism."

The Soviet is now turning out a flood of cheap safety matches. To get markets it does not scruple to practice "dumping," or drastically underselling its competitors in foreign lands. Last year's big importation of Soviet matches (now stopped by the government) did not help the domestic market. Another "dumper" of matches much detested by Swedish Match is Japan, which once renamed one of its small towns "Sweden" and proceeded to flood the American market with matches "Made in Sweden." Such trickery is also employed in imitating one or another of the 9,000 labels that Swedish Match uses in every corner of the globe. These labels are jealously guarded trade secrets before they appear. There are collectors who specialize in match-box labels and who pester Swedish Match with requests for new issues. Swedish Match has some clever labels, but the crown must go to a company which sold wax matches in Mexico. Sales were swelled by putting a picture of the Virgin of Guadalupe on the cover of the box. The wax matches were burned as tapers with the box serving as a convenient shrine.

Indigenous.—There are two species of matches indigenous to the United States and little used elsewhere. One is the strike-anywhere match, the big match with a colored tip that is used by farmers' wives to light the stove and by sportsmen to start their camp fires. Ohio Match turns out a good many, but Diamond is by far the largest producer. The second native product is the book or paper match that one receives with one's change over the cigar counter. This is not so much a match as it is an advertising medium. The manufacturer keeps a corps of salesmen to "sell space" on his covers. The offices of paper matchmakers are deluged with "ideas" for covers. Attempts have been made to fasten scratch pads, even small printed leaflets, to the cover.

Bel Geddes

Member of a new artistic generation, he regards industry as the opportunity of the age. In the process of evoking the natural beauty of industrial objects he begins with a question: what is a bed?

THE rural storekeeper who stuffed his one forlorn show window with shoe laces, doilies, rhubarb, lawn mowers, corsets, and bicycle pumps was not one whit more innocent than the mighty Fifth Avenue merchants of a decade ago. Both pursued the same policy of window-dressing. Both thought that a great congeries of goods was the means of catching and keeping the shopper's eye, that if he did not fancy the pastries in the foreground he would in all probability be unable to resist the rubber boots suspended in the rear.

It was in the midst of show windows overladen in accordance with this theory that the Yuletide hordes of 1928 proceeded up and down Fifth Avenue. Proceeded, that is, until they arrived at Thirty-eighth Street. There, on the west side of the avenue, such a coagulation of rubberneckers occurred that west side foot traffic was practically at a standstill, and inquisitive persons on the east side quickly crossed the street. Those who were able to penetrate the crowd were amazed to find their neighbors merely gaping into a Franklin Simon window.

By all the window-dressing tenets of that time, the window must have contained such a galaxy as to represent the entire contents of the emporium. In reality, the mob was fascinated by a display of just three pieces of merchandise. Behind the enormous pane of glass was a strange, graceful bust sculptured of metal, wearing an Agnès turban and scarf of vermilion and navy blue. A matching hand bag rested on the circular glass platform which supported this glossy little motif. The exhibit was emphasized by concealed spotlights which cast grotesque shadows of the bust in the background, where great triangular shapes were arranged to focus attention on the display group.

The man responsible for the Franklin Simon triumph was an American named Norman Bel Geddes. "The window is the stage," said he, "and the merchandise the players." He may properly be referred to as a man-of-all-design. Just how properly will appear in the course of this discussion of his theories and work. In the meantime, it is not too early to begin to insist on the practical, utile, profitable quality of all the industrial designs which issue from the Geddes studio. He has long since left window-dressing commissions to his forty-odd assistants and is approaching the larger problems suggested by trains, automobiles, steamships, airplanes, theatres, restaurants, factories. But, just as he realized that qualitative window-dressing was bound to be not only more attractive but more inveigling than quantitative window-dressing, so in every industrial field he regards beauty, utility, and profit as mutually beneficial elements, as linked perhaps in a fundamental unity.

It is a nice conception which has seduced philosophers but made only the most diverse and uncertain headway among esthetes and business men. To be sure, the boorish era when business men were unanimously contemptuous of esthetes, and vice versa, is long past. Friedsams, Baches, and Dales devote much of their enthusiasm and no little of their money to the collection of Rembrandts, Titians, and Picassos. Many business men apply their esthetic interest to their enterprises, which they conduct from lavishly furnished offices, Jacobean or Tudor or Empire. Skillful traditional architects are continually investing skyscrapers, stores, and industrial plants with Gothic tracery or the classical orders. For their part, numberless painters, poets, even musicians are fascinated by the dynamic values of industry (Honegger's musical interpretation of a locomotive in his *Pacific 231* is among the most extraordinary cases in point).

But by far the greater number of esthetes persist in their snobbish insistence that all true art is remote from considerations of profit, their fetish of "art for art's sake," their continual, denunciatory application of the term "commercial artist." And those tasteful industrialists who enfold their activities in fine architecture and decoration almost invariably utilize the styles of the past. Because they *are* styles of the past, and not naturally derived from modern conditions, their application to modern buildings cannot help but be a process of superficial adornment. Thus the largest insurance building in New York (New York Life) and the largest newspaper building in Chicago (Chicago *Tribune*) reveal the anomaly of a steel skeleton structure expensively encrusted with Gothic ornamental forms, forms developed in an age when stone carving was the natural rule and not the extravagant exception.

In the past few decades, however, there has matured a generation of artists who not only perceive a connection between beauty, efficiency, and profit, but who insist that these attributes go hand in hand. As an obvious corollary they believe that real industrial beauty should arise out of efficient and profitable activities of the moment, should not be merely an artificial patine applied to industry from the esthetic legacies of the past. To industrialists these men bring a new conception of the significance and value of beauty, a conception to which they may well give heed.

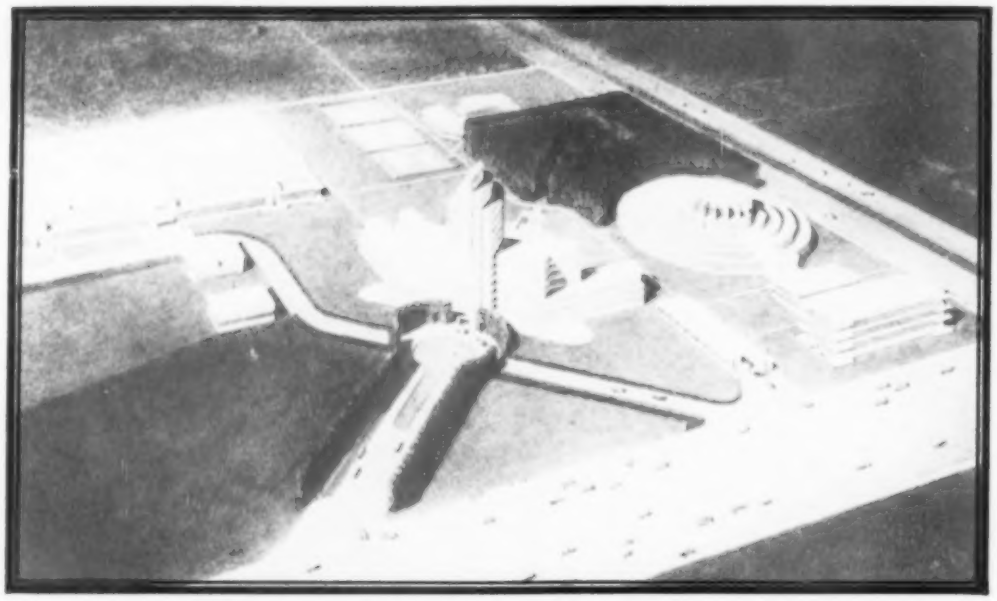
In the first place, the eyes and ideals of this new artistic generation are fixed not on the past, not on the re-creation of archaic esthetic forms or the adaptation of these archaisms to modern conditions, but strictly on the present. They have observed, with a logic which seems inescapable, that any modern estheticism must embrace the machine with all its innuendos. In an age of cogs, cams, and crankshafts, the esthetic fabric will be as closely allied with such mechanism as was the Gothic fabric with whittling and carving tools or the Egyptian fabric with slave labor.

The natural consequences of this question are to be found particularly on the Continent, where the new generation has made the most progress. Such architects as Le Corbusier and Lurçat of France and J. J. P. Oud of Holland pride themselves as much on the stripped economy of their houses, which seem to the uninitiate like a structural geometry of metal, glass, and stone, as did the medieval architects on the teeming floridity of their cathedrals. In 1921 Oud expressed his theories thus (quotation from Henry-Russell Hitchcock's *Modern Architecture*): "In place of the natural charm of walls and roofs of rough materials, unstable in their plasticity and uncertainly patined; in place of windows cut into small panes, nebulously glazed and irregularly coloured; a new architecture will offer us the definite values of artificial materials, surfaces polished and finished, the scintillation of steel and the brilliance of paint, the transparent openness of large windows of plate glass . . . Architectural evolution thus will lead us toward a style that will appear liberated from matter, although it is joined with it more completely than ever. Disengaged from all impressionistic sentimentality; dependent on clear proportions, frank colours, plainly organic forms; divested of all that is superfluous; the new architecture will be able to outvie even Classical limpidity."

Thus the beauty of a structure perfectly adapted to its purpose and time has again become an ideal, after a period in which Connecticut mansions were often Mediterranean in aspect and bogus French châteaux thrust

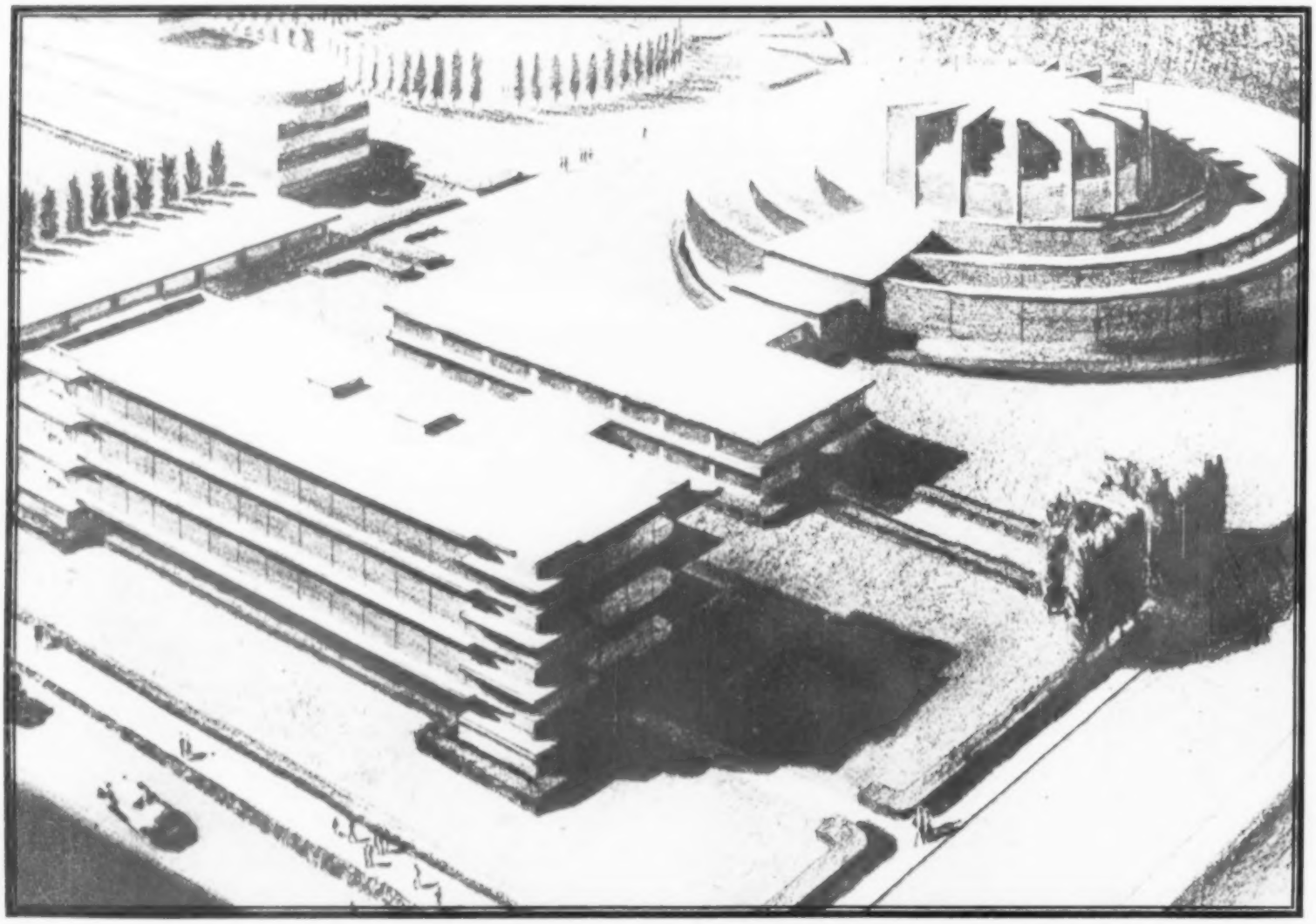
their northern spires through the woods of the Carolinas.

Norman Bel Geddes is among the most gifted American interpreters of this new ideal; his work in an extraordinary variety of fields may be considered as representative of the lot. Significant is the fact that he turned to industrial problems after successful beginnings as a portrait painter of such persons as Enrico Caruso, Ernestine Schumann-Heink, Brand Whitlock, Amelita Galli-Curci, and great accomplishments as a stage designer of such productions as *Ermine*, *Truth About Blayds*, *Lady Be Good*, Eugene O'Neill's *Lazarus Laughed*, *Five O'Clock Girl*, and *The Miracle*. During the past season his brisk evocations of Paris embellished the popular *Fifty Million Frenchmen*. When his production of Aristophanes' *Lysistrata* opened in Philadelphia the customarily facetious Robert Benchley declared in the *New Yorker:* "Mr. Geddes has never done a more beautiful or exciting piece of staging. There are at least a dozen moments during the evening which take your breath away or bring tears to your eyes according to your personal reaction to beauty."



THE TOLEDO SCALE COMPANY. LEFT TO RIGHT, SCALES FACTORY, ADMINISTRATION BUILDING, PRECISION DEVICES GROUP. (BELOW) BIRD'S-EYE PERSPECTIVE OF THE PRECISION DEVICES GROUP

Yet his success in such ventures is not sufficient to divert Geddes from his central ambition. Primarily anxious is he to introduce his talents into the industrial world. He regards industry as the basic opportunity of the age in which he was born. In his converted brownstone house in the Murray Hill residential section, he undertakes to design anything, however humble, confident that he can

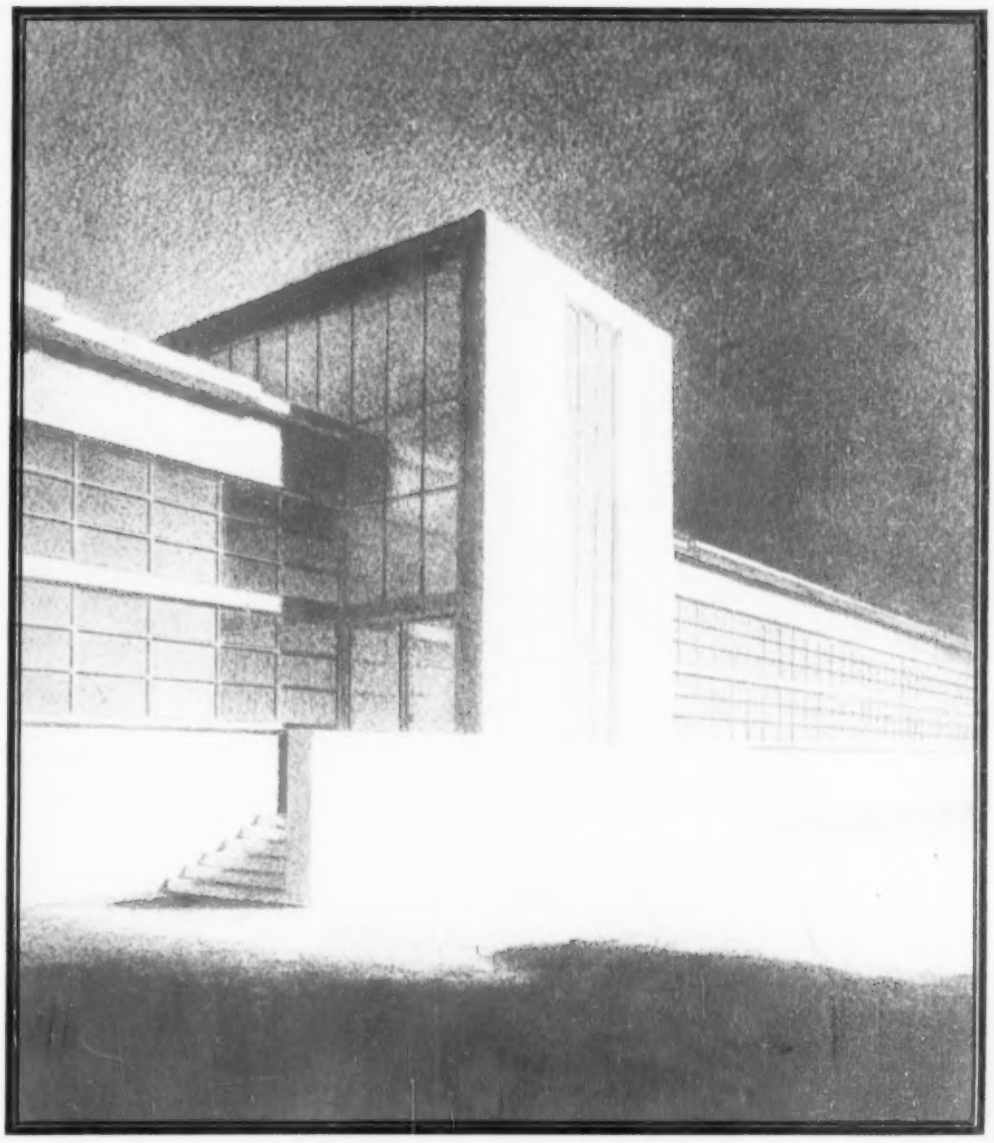


increase utility at the same time that he increases visual pleasure in the object.

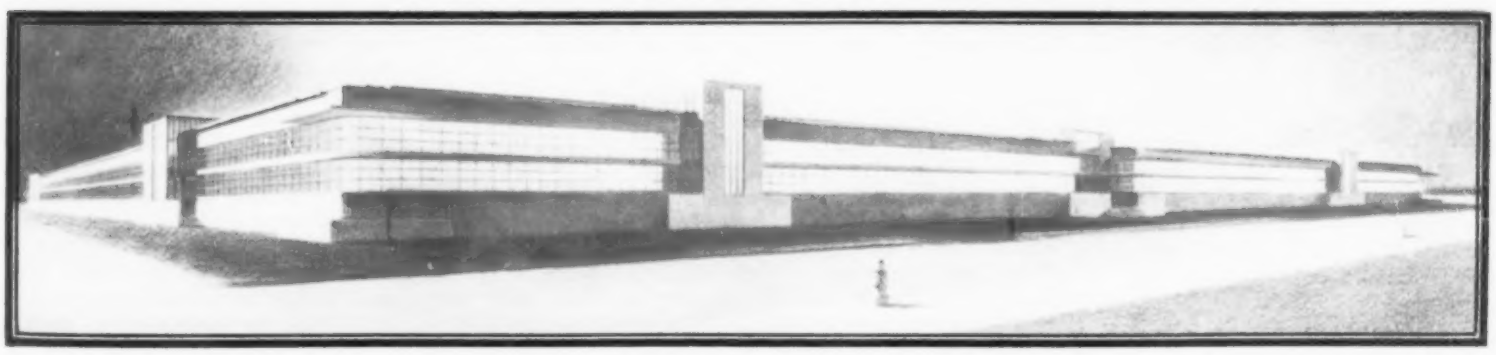
A simple subject—a bed—is illustrative of the manner in which Geddes approaches his task. He does not begin by considering the beds of history and, after the fashion of his predecessors, devising merely another picturesque bower of linen. Instead, with truly Socratic curiosity, he asks himself the fundamental questions: What is a bed? What is the most satisfactory bed which can be imagined? Manifestly, it would consist of the simplest possible horizontal and perpendicular sections, perhaps moulded out of one sheet of metal, certainly devoid of extraneous detail such as legs and bedposts. This answer, as rendered by the Simmons Company from Geddes' designs, seems peculiarly felicitous. Such beds have many palpable advantages. Simple and rugged, they combine ease of manufacture and maximum economy of material (Simmons makes them from discarded railroad rails). They cannot be imagined as either breaking or creaking. They are easily dusted, dismantled, moved. Ramifications in the form of bookshelves and cabinets may be shaped in the metal sections, forming units which a woodworker could not equal in simplicity or strength. Production costs, and therefore prices, are low. The beds possess sheer, graceful lines and the fine sheen of metal which may be variously tinted (because he insists on utilizing the intrinsic beauties of a material, Geddes scorns the painting of metal furniture in imitation of woodwork). To many, the esthetic superiority of such structures over pseudo-Empire and quasi-Heppelwhite divans seems obvious.

Thus does Norman Bel Geddes concentrate on need rather than fancy. A more elaborate example is his assembly hall for the J. Walter Thompson offices in Manhattan. The specifications demanded a formal chamber to be used for lectures before 200 persons, small directorial conferences, informal teas and luncheons, cinema performances, exhibitions of advertising layouts involving such sizable displays as twenty-four-sheet posters. The space assigned was two floors in height, located high in the Graybar Building, with but one exterior wall. Manifestly, Geddes might have made this contract an excuse for sumptuous and expensive decoration. But, as with the bed, he determined to evoke a natural decoration out of the functional necessities. Therefore the room contains no murals, tapestries, or other arbitrary ornament. Natural patterns are formed by the pale gray walls broken on one side by a series of tall, slim windows, and on the other by corresponding pilasters which support adjustable brass racks from which advertising sheets may be hung at any elevation. Another pattern is formed by bands of translucent glass which traverse the ceiling, emitting indirect light in any desired intensity, another by bronze grilles in the window recesses which screen the heating and ventilating systems, another by great, serried chairs of blue-green tapestry with expansive arms for note-taking. The entire auditorium may be focused on a lectern, a triangular plinth of ebony which conceals a loud-speaker, or recomposed to suit a dozen other circumstances. It is a room of impressive plane surfaces, restfully colored, supremely comfortable, completely modern.

It is to be noted that the work of Geddes, although it emphasizes the straight line and



DETAIL OF THE SCALES FACTORY. (BELOW) PERSPECTIVE OF THE SCALES FACTORY

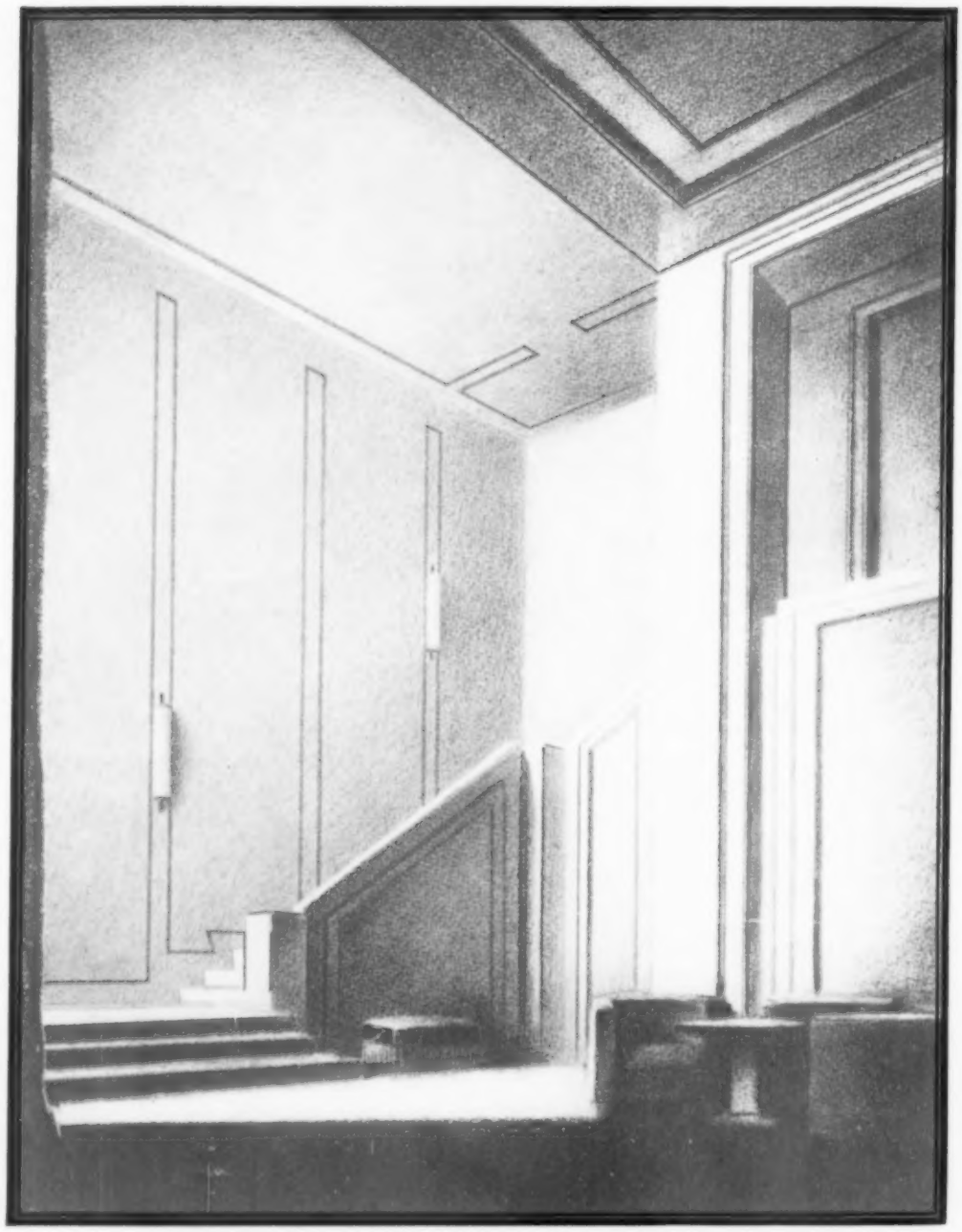


such curvilinear formations as lend themselves to easy construction, does not include the senseless complexity of geometrical and rhomboidal forms which characterizes the so-called "modernistic" vogue. Of this tendency, which antagonizes many who like graceful, meaningful contours, Geddes says: "Modernism at the moment consists largely of a lot of angular gadgets on boxy looking furniture that is not so different in appearance from what used to be called Mission furniture, painted in nursery colors . . . Only the best of anything survives—the greater part of the stuff we are now seeing is of the cheapest, most vulgar sort, 95 per cent of which will have disappeared entirely in five years." His own work is singularly free of "angular gadgets"—the purposes and advantages of his details are quite apparent, so apparent that in many instances one wonders why they have not been previously conceived.

In the very fact that they have not lies what is perhaps the greatest significance for industrialists of men of Geddes' stripe. There are indubitably several ways to sell gas stoves. One is to employ superior salesmen. Another is to build superior gas stoves. The best sales device would undoubtedly be a combination of the two. Yet industry has in general concentrated on the first, neglected the second, and all but omitted the third. "Results!" has been its rallying cry. To that end it has employed salesmen to get results, statisticians to compile results, and economists to ponder results. Unquestionably gas stoves can be sold by this policy. But in the fervid pursuance of the policy industry has tended to forget its stoves. To be sure, it has watched its competitors, has incorporated their improvements in its own stoves, has perhaps been to some pains to keep a step ahead of competition. But always its chief concern has been with sales analysis rather than with stove analysis.

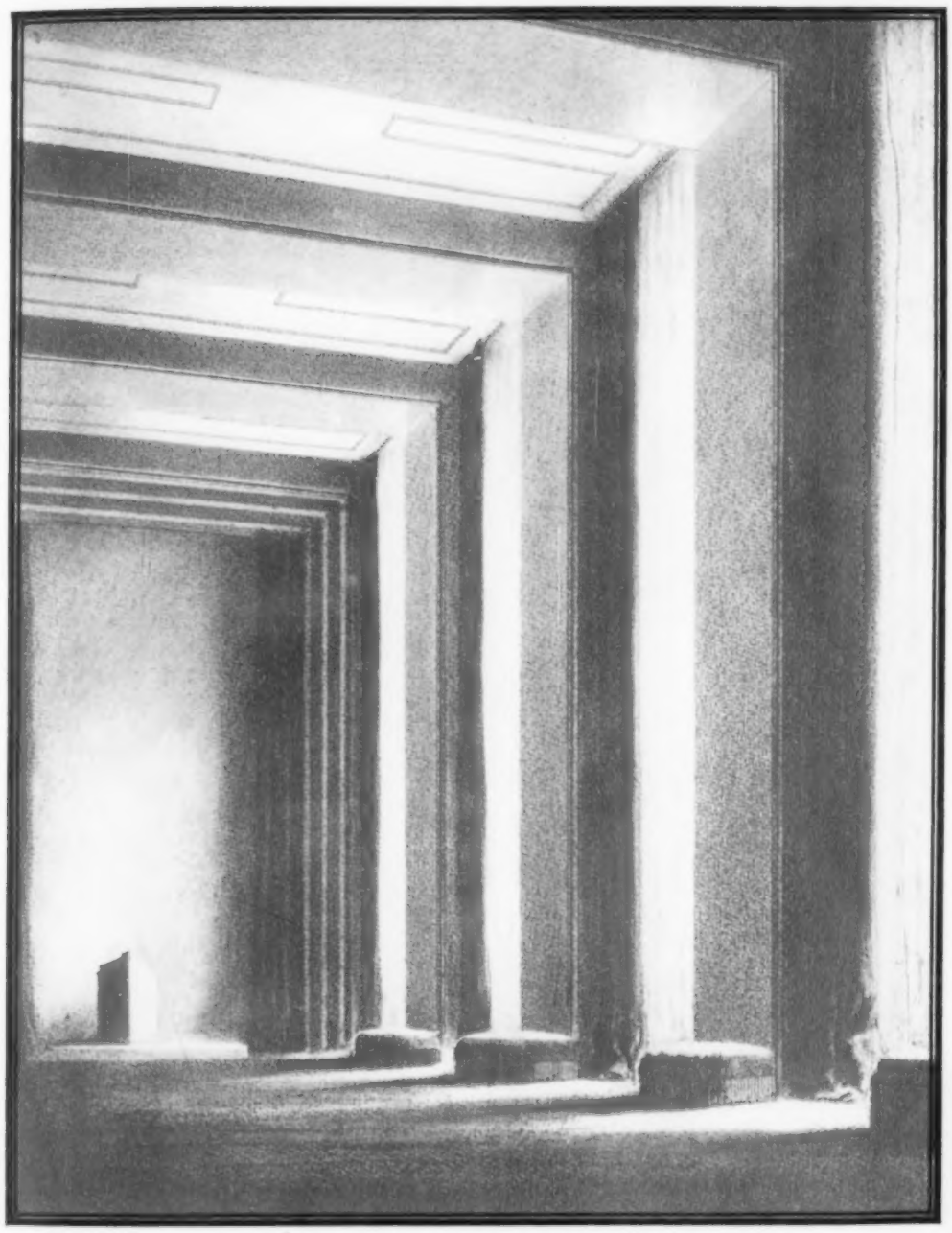
The industrialist is an extravert, an expert in the external world of contacts and contracts. Because his skill finds its natural employment in the extravert's world, he cannot be reproached if he himself neglects his product, merely providing that it shall be kept "up-to-date" or at least as "up-to-date" as that of his rivals. But there are others prepared to do that for which he has neither the talent nor the leisure—craftsmen who will examine his product with detached, speculative gaze, will judge of its requisites and possibilities abstractedly, and very probably re-create it in a new, more utile, more viable form. As the late Luther Burbank toyed with tendrils, wax, and pruning shears, devising unimaginable, lovely, and useful blooms out of the stuff of organic evolution, so the creative designer refuses to be satisfied with the blundering, half-haphazard evolution of man's handiwork and evolves forms of new charm and effectiveness. The industrialist may not care whether his product can be reformed in fresh and more beautiful aspects, but he is indeed blameworthy if he neglects the business implications of those aspects.

The extent to which the appearance and utility of products may be improved in ways



MR. J. WALTER THOMPSON'S ASSEMBLY ROOM . . .

unforeseen and unpredictable by their entrepreneurs is vividly demonstrated in the field of transportation. The designs for the new North German Lloyd liners *Bremen* and *Europa* were supervised by German draftsmen of the most modern tendencies. When they appeared on the seas, their rakish hull structure, streamlined superstructure, and windbreaking funnels immediately set new standards in naval architecture. Giant ships like the *Berengaria*, the *Leviathan*, and the *Ile de France* seemed suddenly squat, square, ponderous. To a certain extent they had been outmoded, not only esthetically but in efficiency as well. There can be no doubt that the high speed attained by the Lloyd twins is greatly facilitated by the lessening of wind resistance due to their improved contours. And speed is only one element which attracts voyagers. There is also the inward modernity of the vessels, the intangible allurement of the latest developments in maritime luxury (in this regard the *Ile de France* may be said to equal the Lloyd liners). Here, of course, the factors of interior decoration and equipment come into play—modernistic saloons so rich and stately that they cannot be conceived as faddish, various helpful devices such as deck diagrams upon which the path to any section of the ship is illuminated at the touch of a button. Such features delight and profit both the steamship men and their clients. Norman Bel Geddes inquires why they were not customary ten years ago. No technical considerations interfered. And he gives his own answer—commercial specialists have been slow and reluctant to entrust certain aspects of their business to imaginative specialists. Going further, he declares that the possibilities of modern



. . . HAS VARIOUS ASPECTS AND PURPOSES

design have scarcely been touched, that imagination has not even begun to appreciate its own scope.

A similar history is to be observed in the case of locomotives and railway cars. "Airplanes, automobiles, ocean liners, and railway trains," says Geddes, "all have the problem of cutting down air resistance, and the only one of the four that conscientiously attacks the problem is the airplane." Anyone who has ever scrutinized a steam locomotive or a stolid, blocky electric engine will agree that they exhibit little if any conscious attempt to eliminate wind resistance. Yet the burnished projectiles in which such daredevils as Major Segrave assault the automobile speed records are eloquent proof that efforts to diminish wind resistance inevitably raise the esthetic quotient.

Railway cars present a different and even more startling example of negligence. No one needs to be told that what comfort they offer is only rudimentary. Geddes points out that in interior finish they are still survivals of the early days when they were in fact nothing more than wooden carriages on rails (they are still referred to as coaches or carriages). Rendered for the most part in steel, gloomily and absurdly painted to look like woodwork, they provide as little pleasure to the eye as they do to the spine. The fact that railway travel is largely a necessity, that people are therefore forced to ride in whatever vehicle is provided, makes it possible for many railways to ignore the possibilities of more appealing rolling stock. In crowded areas, however, where two or more railways serve the same cities, a competitive advantage would surely be gained by that which furbished its cars with an efficiency psychological as well as vehicular, seeing beyond the bald need of transporting certain numbers of people to certain places at certain times.

The automobile also retains much of its indebtedness to the antique principles of coach-making. Three years ago Geddes began studying automotive problems. He decided that "automobiles have always been designed from the motor outwards . . . whatever grace and beauty they possessed came as an afterthought." Employing the formulas of aërodynamics, he devised a body streamlined as absolutely as possible. Engineers told him that, if built upon an ordinary chassis, it would permit of a velocity of 62 m.p.h. when the motor speed was sufficient to propel the same chassis with an ordinary body at 45 m.p.h. His own judgment convinced Geddes that the public, slow to adjust itself to new impressions, would bridle at his extreme design, which was in essence a vehicular airfoil. Hence he called it Car No. 5, implying that it was a precocious model, five years ahead of its time. Working backwards, with successive modifications he produced Car No. 4, Car No. 3, and finally Car No. 1, which he believes the public will accept at the present time. This design is the basis of a new series projected by a prominent automobile manufacturer. So obvious are some of its unprecedented features, so easily copied, that Geddes is obliged to withhold its details.

The imaginative originality indispensable in any designer who would do more than merely elaborate conventional forms is strikingly illustrated by Geddes' suggestions as consultant to the architectural commission of the Chicago World's Fair of 1933. He hopes that a dramatic arrangement of the fairgrounds, preferably in the form of one great amphitheatre, may be effected, so that the spectator's interest is heightened as he turns each new corner, scans each new vista. Among the Geddes schemes: a water pageant theatre in which the 1,500 choicest seats are located in floating canoes; an aquarium restaurant whose walls and ceiling consist of glass tanks brimming with fish; a gigantic *al fresco* cabaret threaded with tunnels which serve to conceal the scurrying waiters and provide rambling platforms upon which the entertainers may perform in any section of the vast enclosure; an aërial restaurant revolving on a steel shaft, offering a changing panorama of Chicago from a height of 275 feet.

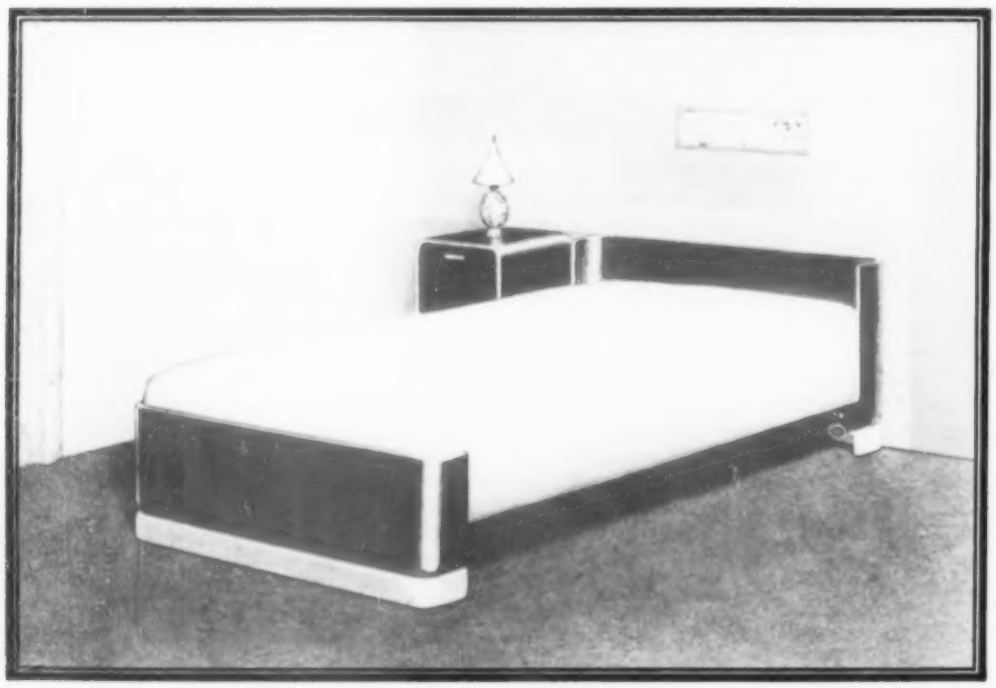
The festal character of these ideas obviously eliminates them from the serious consideration of the industrialist, although he might well take to heart the ingenuity they express. To industrialists Geddes can offer no more convincing example of his whole function and method than his work for the Toledo Scale Company. Commissioned to redesign Toledo scales, he sent his assistants into great metropolitan markets, into rural stores, where they talked scales with clerks and customers. Mulling over the evidence, studying the technical requirements, he realized that scales needed no complicated appendages, levers, external moving parts, awkward contours. But even he was surprised to discover

that in the process of producing a simpler, more decorative scale, actual simplifications and improvements were arrived at in the inner mechanism of the instrument. True to the industrial type, the Toledo Scale Company had assumed their scales to be wholly satisfactory, had expended their greatest energy and ingenuity in the sales department. For them, Geddes struck a new balance between sales and scales.

President H. D. Bennett, of Toledo, may have been dubious about entrusting scale design to the inexperienced and suspiciously esthetic Geddes. But so impressed was he with the result that he engaged his scale designer to create an entirely new plant for the Toledo Scale Company and associated companies. He has been rewarded with such an exciting set of plans as has rarely ever been seen outside the most advanced industrial areas of Germany and Holland.

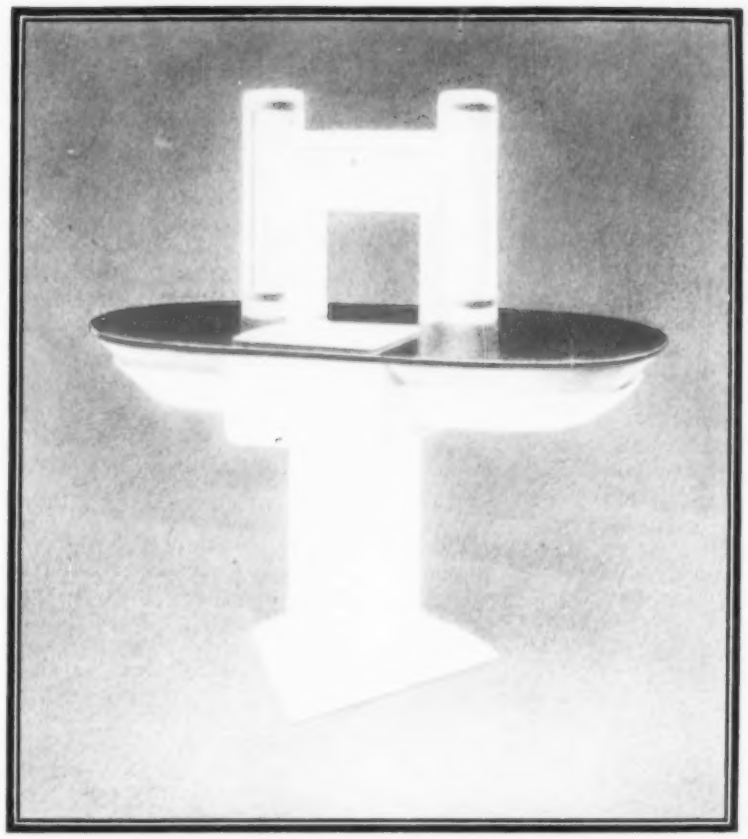
On an eighty-acre site Geddes has spread a porcelain factory, scale factory, central heating plant, administration building, laboratory, machine shop, flying field, swimming pool, children's playground with pool, wooded picnic plot, athletic field, and groups of hangars, garages, tennis courts. Intricate, lengthy, even dirty labors may be performed in the factory buildings, but they will adorn, not sully the countryside. Furthermore, those who perform the labors will enjoy a maximum of light, cleanliness, and convenience. Designed to accommodate the Toledo Scale Company's new mass production machinery, the buildings are great, suave geometrical forms with walls composed almost entirely of glass. The prevailing lines are horizontal; the group has a sleek grace which should make it as much the object of public inspection as Toledo's public buildings or monuments. Representing the Geddes method on an heroic scale, each building has been planned not only with regard to its specific function but with regard for the inconceivable developments of the future. The present and future utility of the plant may be said to be built into its architecture. Columns and barriers have been minimized to permit of easy departmental rearrangement and the relocation of machinery. A service basement extending under the entire manufacturing area permits of such changes without inconvenience to the manufacturing floor. Not the least significant is the fact that this modern hive will be far more economical to construct than its less efficient predecessors. Out of the needs of a particular industry, without resorting to superimposed ornament, Geddes has wrought an architectural organism which is thrilling and not repulsive to behold. Whether the thrill of this conscious, tasteful, superbly efficient arrangement of an industrial plant is truly esthetic, the individual must decide for himself. But there are many who feel that the industrial civilization is capable of producing a vibrant, distinctive art, and that Toledo's plant, now under construction, is an example and a harbinger.

COUNTER SCALE. (BELOW) SIMMONS METAL BED



Advertiser & Artist

A portrait of Bel Geddes



"ISLAND" WEIGHING SCALE. THE SCALE IS AN INTEGRAL PART OF THE COUNTER

IF you drove your Packard into a service station to have it overhauled and if the chunky, tousled figure of Norman Bel Geddes squirmed under the greasy chassis, you would not be in the least surprised. He suggests a machinist; he has the belligerent, impatient curiosity of many of the best of them. He suggests the small boy who wants to understand how everything works; in the case of Geddes this curiosity is magnified to include a vast terrain of human ideas and concerns. While devising his celebrated war game, which requires twenty-eight players, several months, and some 6,000 pieces for one series of hostilities, he studied naval strategy so intently that later, in the course of "battle," he frequently confuted an admiral in the U. S. Navy whom he had invited to participate in his miniature Jutlands and Heligolands. When the medieval mummeries of *The Miracle* were proposed, Geddes immured himself with innumerable treatises on the pointed style and emerged a learned Gothicist. From Jutland to Chartres is a long way, geographically and spiritually, but Geddes travels many such distances, from cook stoves to diadems, with absorptive mind and fecund imagination.

He was born in Adrian, Michigan, in the nineties. After early schooling such as any Michigander might receive, he attended the Cleveland School of Art and the Chicago Art Institute. Soon he met Henrik Lund, a Norwegian painter, who convinced him that academies were all very well for ornithology or comparative literature but had nothing whatever to do with art. Thus he abandoned the routine esthetic curriculum and began his interlude of portrait painting. But even the depiction of notable people is not very profitable for a youngster of twenty whose name has not yet begun to reverberate, who has a mother and a brother to support. So he went to work with Barnes-Crosby, advertising illustrators of Chicago, at a salary of $3.00 per week. He rose to be art director of a famous advertising agency. During this period he designed the squarish lettering familiar in the trade-mark and advertising of Dodge motor cars. Within a year his services as manager were sought by Barnes-Crosby, to whom he returned, aged twenty-one, to receive a salary of $400 per week.

In less than two years he executed some 3,000 drawings of a commercial nature, posters for Packard and General Motors, covers and illustrations for the *Saturday Evening Post*, *Collier's*, and other ranking publications. His reputation grew accordingly. A parallel growth was an overwhelming impulse to do stage design. He was released from Barnes-Crosby when the president discovered that Geddes spent most of his office hours dictating an Indian epic-drama called *Thunderbird* to the presidential secretary. And so, for what many might consider a whim, he renounced his advertising opportunities, nosed about a Detroit theatre, then departed to Los Angeles to join a stock company.

Five of his California productions gave him another sort of reputation. When the season was over he returned to New York as a protégé of Otto Kahn, under whose patronage he designed three productions for the Metropolitan. During the following year he designed sixteen Broadway theatricals. This was fourteen years ago.

His work in this vein totals some ninety operatic and theatrical contracts, including hundreds of articles of furniture and sets, thousands of costumes. He was the first stage craftsman to utilize lens lamps (spotlights) for general illumination. Combining them in batteries with rheostatic control of intensity, graded colors, and variable beam angles, he draped his stage in diaphanous shrouds of light. These light batteries he placed on the balcony railing, a procedure now universal in well-equipped theatres. For his Parisian production of *Jeanne d' Arc* with Eva Le Gallienne he built only one set, but by the manipulation of lights he made it represent a rural byway, the Dauphin's palace, an Orléans street, a gaol, the Cathedral of Rheims.

Many consider the apex of Geddes' dramatic conceptions to be his project for the staging of Dante's *Divine Comedy*. This drama is performed by tumultuous shadow shapes in a vast and somber saucer descending centrally into a black pit, ascending on its far borders into two mighty stalagmitic formations. Among other things, it involves an amazing, dynamic light program. During the early stages a diabolic illumination emanates from the pit. As the action progresses the source of light gradually rises until the scene is flooded from above. At the transcendent moment of conclusion the full, dazzling incandescence of the complete system is flashed directly into the eyes of the audience. Short of actual production, everything possible has been done to test the feasibility of these ideas; illuminated scale models have been photographed representing each progressive phase of the comedy. Collected in a book, they form one of the most impressive figments of modern stagecraft.

But from such esoteric concerns Geddes insists on returning to the utilitarian world. Anyone who has ever surveyed a great city from a lofty window or studied the busy labyrinths of industry from any comprehensive angle should be prepared to understand the impulse which eggs him on, which has made him subordinate even his theatrical devotion. Civilized man lives and works, for the most part, in a hideous earth-crust of his own devising. Myopically concerned with the problems of profit, he has overlooked the proposition that the greatest profit may be attendant upon beauty, that whatever is stupid or ugly cannot possibly be functionally superior. To this proposition Geddes is dedicated. With Santayana he might say: "The same manual restlessness and knack which makes a man a manufacturer of toys makes him, when by chance his toys prove useful, a manufacturer of implements. Fine art is thus older than servile labor, and the poetic quality of experience is more fundamental than its scientific value." Whichever is more fundamental, the work of Norman Bel Geddes is rapidly demonstrating that poetic qualities and scientific values may be combined for mutual benefit; that the sacrifice of one, indeed, means the diminution of the other.

Giants at Eddystone

Under new management, historic Baldwin Locomotive battles for its place in an industry which may be dead today, booming tomorrow.

BALDWIN built more locomotives in 1873 than in 1928. Trains went as fast, often faster, thirty years ago as they go today. The speed record for building a locomotive in the Baldwin shops (eight days) was established in 1888. These three statements denote an industry that, if not backward, at least has not forged ahead at the dynamic pace of most American industries in the last quarter-century. But it is to be noted that Baldwin *could* build more locomotives today than it could have in 1873, that trains *could* go much faster today than they did in 1890, and that Baldwin probably *could* shatter to bits its eight-day speed record if it wanted to. There has been no demand for any of these things to be done, and hence they have not been done.

Where there has been a demand, Baldwin and the other builders have met it. The modern locomotive is a vastly more efficient machine than the locomotive of 1880 or of 1900. The superheater and the feed water heater (which uses waste heat to heat the water before it enters the boiler) have made possible great fuel economies. Articulation (see box) has doubled the maximum number of driving wheels. The mechanical stoker sprays coal into the fire box faster than the brawniest fireman could hope to shovel. The Walschaerts, or outside, valve motion has long replaced the old Stephenson link motion. Other important improvements in the 1900-1920 period are the power reverse gear, the "booster," and the sectional fire brick arch. Though fewer locomotives are ordered today than twenty years ago, the aggregate tractive power is the same if not larger. In 1880 a typical locomotive was the *American*, which weighed 75,000 pounds and whose boiler had a heating surface of about 1,000 feet. By 1918 the *Pacific*, one of the standard types of the time, weighed 306,000 pounds and had a boiler heating surface of 3,824 square feet. And the eleven monsters now being constructed for the Northern Pacific, the hugest to be built so far, weigh 729,000 pounds and have heating surfaces of 7,666 square feet.

This is an impressive record of progress, but it does not lay the ghost of Baldwin's 1873 production, which actually surpassed its 1928 output. The situation seems to be that whereas locomotives as machines have been steaming ahead in the 20th century, locomotives as an industry have crept along very slowly, have even done a little backing up. The production of automobiles, toothbrushes, steel girders, and the other impedimenta of this machine age has mounted dynamically, almost alarmingly in the last quarter-century. Not so the locomotive. Except for the temporary stimulus of the World War, production has shown a tendency to decline since 1900, especially in the last decade.

"I have seen the grass, at times, grow six inches high in the Baldwin Locomotive Works," remarked Samuel M. Vauclain a year or two ago. "It is not six inches now," he continued. "Therefore, why worry?" But Mr. Vauclain has done a good deal of worrying in his time, and the dominant Baldwin interests of today are, of course, conscious of the industry's tremendous fluctuations, reflected in Baldwin's operating income over the past five years:

1925	$2,350,000	(deficit)
1926	3,810,000	
1927	2,040,000	
1928	420,000	(deficit)
1929	3,850,000	

These figures are not accidental; they emerge from a condition and a relationship entirely apparent to railroaders, but which will here bear brief comment.

While building a locomotive is as massively stolid an operation as any in the entire range of manufacturing, selling a locomotive is as flightily uncertain a business as starting a new vogue in millinery. One would expect the demand for so basic a product as a locomotive to be fairly constant. But Baldwin's annual production figures climb and fall with large and sudden jumps. This is because comparatively slight fluctuations in the business of the railroads cause very much greater fluctuations in the orders they place for new equipment. Thus a 10 per cent increase in traffic might well call for fifty new locomotives instead of the normal twenty-five. This would, of course, be a 100 per cent increase for the builder. And declines in traffic react with equal exaggeration on the equipment makers. If there were a really drastic decline in traffic some year, say 5 per cent, it is quite likely that the railroads would not need to order a single new locomotive.

There is evidence that the rolling stock industry is grievously overbuilt. Baldwin has an annual capacity of 3,000 locomotives, nearly

HOW TO RECOGNIZE A LOCOMOTIVE

A LOCOMOTIVE, considering what it is called upon to do, is a surprisingly simple piece of mechanism. Essentially, it is a boilerful of water, a fire to heat this water, and some cylinders and pistons to apply to the wheels the steam thus generated. Nor do locomotives vary much more widely, one from another, in design. They are classified not by any involved interior arrangement of pipes and cylinders but by their most obvious parts: their wheels. There is no reason to be perturbed by a technical description of a locomotive as a 4–6–2 *Pacific* type. *Pacific* is merely a popular, picturesque synonym for 4–6–2; such names are dying out in this businesslike era. The mystery of 4–6–2 is soon explained: the first and last figures refer to the number of small (or truck) wheels in the front and rear respectively; the middle figure refers to the number of driving wheels. Thus a *Pacific* or 4–6–2 engine has a four-wheel truck immediately behind the cowcatcher, followed by three pairs of drivers, and a two-wheel truck in the rear under the fire box. Mathematically, the mutations and permutations possible between these three units are enormous. Practically, they are limited to somewhat less than forty combinations. Which means there are about forty different types of locomotives, though this wheel-classification does not include certain other locomotive distinctions, such as compounding and double or single expansion. The most important, currently or historically, of locomotive types would certainly include the *Consolidation*, *American*, *Mogul*, *Prairie*, *Atlantic*, *Decapod*, *Sante Fe*, *Mikado*, and *Pacific*.

Locomotives built today tend to have four wheels on the rear truck in order to support an extra wide and deep fire box and so obtain more power. The 4–6–2 *Pacific* has become the 4–6–4 passenger type of the New York Central; the 4–8–2 *Mountain* has become the Chicago & Northwestern's tremendously powerful 4–8–4 type; and the 2–10–0 *Decapod* has become the Union Pacific's 2–10–4 freight locomotive. Lima has jazzed up even the old *Consolidation* (2–8–0) by adding a four-wheel rear truck, making it a 2–8–4.

The *Articulated* or *Mallet* locomotives are the largest and most powerful on the rails. Anatole Mallet, a French engineer, was the inventor. Essentially, he divided the locomotive frame, or chassis, into two parts connected by a hinged joint, and to each of the parts he gave a separate set of driving wheels worked by separate cylinders. Whereas the maximum number of drivers practical in a nonarticulated locomotive is probably the six pairs of the Union Pacific's 4–12–2 fast freight type, the *Mallet* makes sixteen drivers a commonplace. And Baldwin can build, and has upon occasion done so, a doubly articulated locomotive with no less than twenty-four driving wheels, which is represented by the monstrous symbol: 2–8–8–8–2.

three times as many as all three builders have been turning out in recent years. Even allowing that these "capacity" figures are theoretical in the sense that no one expects them to be reached, the spread between capacity and production is alarmingly wide. In its plant and equipment alone Baldwin has $35,670,000 invested, a necessarily large outlay. To realize any profit on this, a few hundred locomotives a year are not enough. Chairman Woodin, of American Locomotive, recently told an inquisitive stockholder that in order to earn the annual dividend of $8.00, the company needed a yearly production of from 600 to 800 units. Yet last year, which was the best since 1926, there were only 1,395 locomotives ordered from all three builders, of which total American Locomotive got just 330. The builders themselves tacitly recognize that they are overbuilt by the efforts they are making to push into other lines of manufacturing, as Baldwin with its heavy investments in Standard Steel Works and Midvale Steel, and American with its subsidiary, Railway Steel Spring Co. The War is largely responsible for the present condition. The locomotive builders greatly enlarged their plants to take care of War orders. Everyone expected that when the government turned back the railroads to their owners, a great deal of heavy buying of equipment would follow. But nothing of the sort took place. Since 1920 the railroads have been buying less and not more rolling stock.

Overbuilt or underequipped?

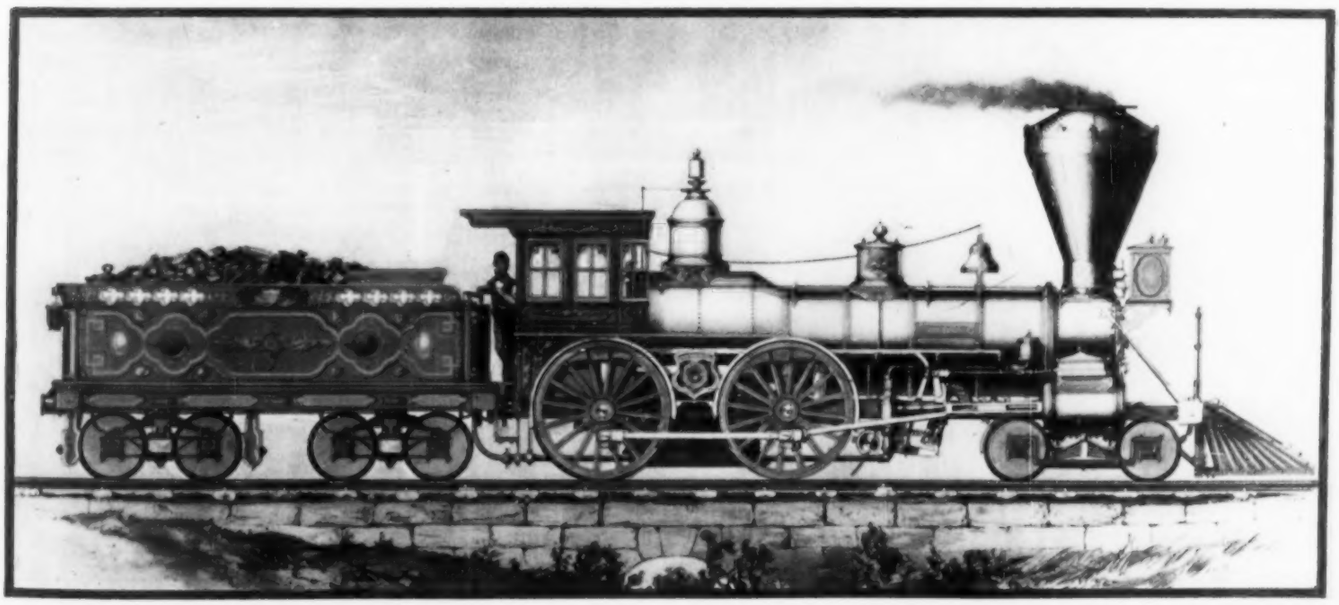
In the last ten years the rolling stock requirements of our railroads have declined drastically from their level in the first part of the century. Locomotive orders, for instance, which once averaged 3,000 a year, have hovered around 1,000 since 1920. As a result of this slacking-off in buying, the Class I railroads have in service today fewer locomotives than they had in 1912 and fewer freight and passenger cars than they had in 1920. With demand for locomotives what it is today, Baldwin is unquestionably overbuilt. But in 1920 only a Ford could have foreseen the inauspicious conjunction of forces that has produced the present situation. One of these factors is that the railroads, in the face of competition from motor trucks and automobiles, have only slightly increased their business since 1920.

The railroads' period of expansion is over. They are now concentrating on efficiency and economy of operation. These are the other forces behind the drop in rolling stock orders. The index figure for railroad operating efficiency (a composite reflection of thirteen such factors as ton miles, freight train speed, and fuel consumption) has risen from about 103 in 1923 to about 121 in 1929. This means that the railroads are getting more and more out of their rolling stock. In the last twenty years freight trains have lengthened out from 40 to as many as 120 cars in a single train. The future development of roller bearings on cars may stretch out trains to unheard-of lengths. The Chicago, Milwaukee, St. Paul & Pacific is a pioneer in this line. Locomotives are being used more continuously, with several crews assigned in shifts to one engine instead of the old system of one crew to an engine. There has also been a tendency to modernize old locomotives. So easy is it to install the superheater, the power reverse gear, and such devices on old locomotives that 79 per cent of the locomotives in service today are ten years old and 35 per cent of them are over twenty years old. Apparently the railroads expect a new locomotive to last them about fifty years, which, for Baldwin, is a long time between drinks.

The locomotive builders

Mr. Vauclain of Baldwin thinks highly of the steam locomotive "from both practical and sentimental viewpoints." Practically, the locomotive is the machine which last year carried from one point to another several million tons of wheat, shoes, automobiles, washing machines, coal, iron ore, dishrags, Hershey bars, baseball bats, steel girders, and such adjuncts of American life. Sentimentally, the locomotive is the machine which has run over the plains and under the mountains of the world, leaving behind it great clouds of smoke and the seed spores of civilization. It is the machine which has ponderously puffed its way into the imaginations of many generations of American small boys, and which so overawed the youthful William Ellery Leonard that he wrote a book, *The Locomotive God*, to explain the terrible effects on his after life.

If one wanted to buy so marvelous, so terrible a machine, there are three companies in this country, and only three, which would make it. The smallest is the Lima Locomotive Works, at Lima, Ohio, which has built up a fine tradition of craftsmanship in its fifty-eight years of existence. The largest in point of total assets, though not necessarily so in point of production, is the American Locomotive Company. The oldest is the Baldwin Locomotive Company. Founded in 1832 by Matthias W. Baldwin, the company has built locomotives for the World War, the Civil War, and would doubtless have built them for the War of 1848 had there been any demand. Its part in the development of the American locomotive is second to none. Baldwin has introduced many of the most famous locomotive types: the *Atlantic*, the *Consolidation*, the *Decapod*, the *Pacific*, the *Prairie*, the *Mikado*.



IN 1834 A LOCOMOTIVE LIKE THIS WAS NO JOKE. BREESE & NEELAND BUILT THIS, PROUDLY CHRISTENED IT *YOUNG AMERICA*

Eddystone

At Eddystone, Pennsylvania, there is one of those gigantic industrial landscapes that betokens the presence of a large manufacturing company. Spread over 596 acres are groups of modern, steel, and concrete factory buildings, centering around a tall, cross-shaped office building. In front of this building is a pedestal, and on the pedestal a graven image. The image is that of Matthias W. Baldwin, and the many buildings he reflectively surveys are the Baldwin Locomotive Works.

Here are to be found the broad shops and the massive machines that are necessary to build the modern locomotive. There is the fifteen-acre boiler shop, whose vastness is divided into five or six lofty "bays," as in any medieval cathedral. In this huge structure even the brawniest of workmen look puny. During the War, Remington made 1,000,000 rifles here from September, 1917, to September, 1918. War days set all Eddystone humming on a note it has not since recaptured; towards the end, it was turning out 300 *Pershing* locomotives a *month*. There is the frame shop, the tender shop, the machine shop, each of them of sizable dimensions. The foundry is said to be the largest locomotive foundry in the world.

Above all, there is the erecting shop, where the products of all these and many more shops come together to be welded and riveted into a locomotive. Starting at the lower end of the shop with little more than a boiler mounted on a pair of wheels, the embryo locomotive travels slowly toward the other end. When its journey is finished, generally in about two weeks, it emerges into the sunshine of the yards a complete locomotive, ready to steam off under its own power. The entire process of building a locomotive takes four months, on the average, though in 1888, as a test, one was put through in just eight days. If the locomotive is destined for a near-by railroad, it generally steams there over the Pennsylvania or the Reading (whose tracks reach Baldwin). Locomotives that are going to western roads are usually hauled there as freight, as in the spectacular *Prosperity Special*, consisting of twenty new locomotives built for the Southern Pacific, which went across the continent in 1922. If the locomotive is to be exported, it is put on shipboard at the company's wharf on the near-by Delaware River.

Baldwin abroad

This has been the fate of many a Baldwin locomotive. The jungles of Sumatra and the fjords of Norway both know the engines Baldwin makes. Since 1836, when the first export sale was made, seventy-eight foreign countries have bought locomotives from Baldwin. Immediately after the War, Mr. Vauclain gave a great impetus to exports by inaugurating a policy of credits to nations buying Baldwin locomotives. So widely did he extend these credits that at the end of 1922 his company had some $20,000,000 owed to it by foreign nations. And so wisely did he extend credit that at present only about $4,000,000 of this is still outstanding

Photographs by Paul Hesse

A NOCTURNAL VISION OF WILLIAM ELLERY LEONARD'S LOCOMOTIVE GOD THRONED ON HIS TURNTABLE BEFORE THE ROUNDHOUSE

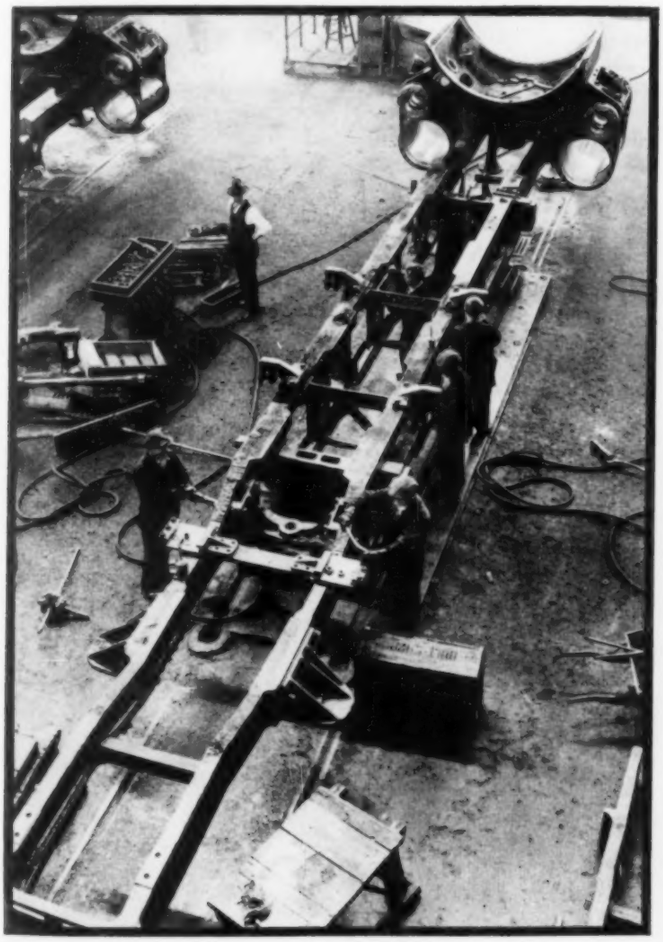
on the company's books. To increase foreign trade Mr. Vauclain has not hesitated at somewhat bizarre expedients. When he sold the King of Rumania twenty-five *Consolidation* locomotives for His Majesty's State Railways, the security was Rumanian oil and some of the payments were actually made in oil, a reversion to barter in international trade. Many a banker shook his head disapprovingly when the Argentine State Railways bought eighty-five Baldwin locomotives and Baldwin loaned them 30 per cent of the value of their order in cash. Conservative bankers were also horrified when Mr. Vauclain shipped $6,965,000 worth of Baldwin locomotives to the newborn Republic of Poland on credit, before the young nation had even settled its boundaries. "They will pay us," declared Mr. Vauclain. That was in 1919. Last fall Poland paid the last installment on the debt, nor had she once fallen behind in payments, even in the early days when the Bolsheviki were pressing close on Warsaw. Thus was Mr. Vauclain's faith justified. However, though its adventures abroad were on the whole successful, Baldwin these days is taking a more conservative attitude towards foreign credits.

The Fishers and the future

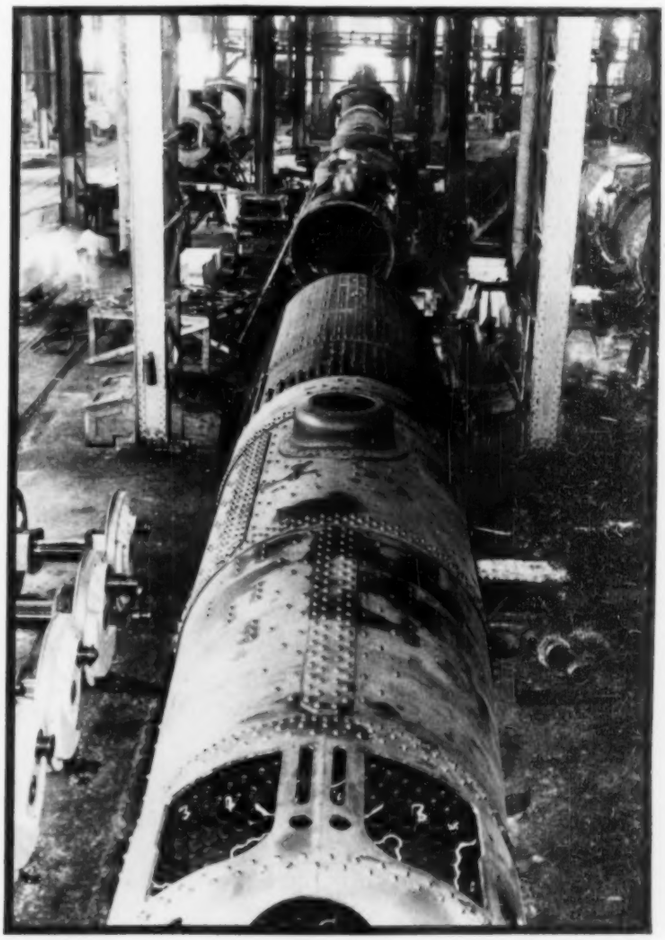
Baldwin has a chairman of the board, a chairman of the executive committee, and a president, each of them at present a significant figure. Samuel Matthews Vauclain is chairman of the board. His long career with the company, begun in 1883 and culminating in 1919 with the presidency, is drawing to its close. The chairman of the executive committee is Thomas S. Gates, of Philadelphia's old and potent Drexel & Co. The significance of Mr. Gates is that he is a Morgan partner. Tall, calm-faced George H. Houston is now president. The significance of Mr. Houston is that he has for many years been associated with the Fisher brothers. His election in March, 1929, to succeed Mr. Vauclain marked the emergence of a new powerful influence in Baldwin management.

The most important factors in Baldwin's financial future are the Fisher brothers and Mr. Arthur Cutten. They came into the company via Wall Street and the stock market, bought Baldwin stock in enormous quantities, saw it rise from 92 in 1926 to 233 in June, 1927. Down at Eddystone, old Samuel Vauclain, watching the Fisher entry and feeling his leadership of Baldwin slipping, publicly announced that his company was running at only 20 per cent capacity, and, somewhat less publicly, intimated that the stock was worth no such prices. But by the end of 1927 the Fishers held over half the common stock and a good block of the preferred. And Mr. Cutten went on the board.

The Fishers paid well for their present dominating position, but today there are two Fishers (Fred and Edward) on the board and a Fisher-man in the presidency. The Fisher touch may well be detected in the excellent quarterly business that Baldwin announced last March: $6,733,000 as against $2,234,000 for the same three months of 1929. And the new régime may be responsible for Baldwin's sales victory over American Locomotive last year, with 468 orders as against 330 for its vigorous competitor. Even more gratifying was another recent sales victory, when Northern Pacific, which had gone elsewhere for the first of its dozen new monsters, had Baldwin build the remaining eleven. As noted previously, these are the world's largest locomotives.



THIS PONDEROUS CHASSIS IS SOMETIMES CAST IN ONE PIECE



TO COMPLETE A LOCOMOTIVE TAKES ABOUT FOUR MONTHS

TIME WAS WHEN THESE DELICATE LITTLE BOXES ON WHEELS TRANSPORTED THE REALLY SMART TRAVELER ON THE STAGECOACH TRADITION, AS WITNESS THE GUARDS SITTING

A. C. F.

Means anything from scows to yachts, from manhole covers to carburetors, but especially does it mean freight cars. And if fewer freight cars, then more buses.

RAILROAD men talk about freight cars living twenty-five years. They might just as well say that a freight car lives forever. For a freight car lives by repair. Trundle a rosy new car out of the shops today—in ten years not one of its present parts may remain, each may have been replaced. Some railroads have a theoretical schedule for the life of each part, and each part is replaced when its time comes whether or not it shows any signs of wear. Catastrophe, of course, will end a freight car's life, but catastrophe is, fortunately or unfortunately, rare. Obsolescence will also send it to the scrapheap, but now that freight cars have apparently reached their maximum practical size, obsolescence can not be relied upon to destroy a freight car's use and hence give freight car builders more work to do.

So, speaking of freight cars, we are led directly to the question of the hour: are railroads justified in building their own cars? This question we shall formulate.

There are 2,700,000 freight cars in the United States, and a large share of them have been built by the American Car and Foundry Co., headed by William H. Woodin,

THE MODERN TRAVELER IN EUROPE, IF HE IS DOING THE GRAND TOUR, TAKES SOME SUCH LUXURIOUS THE *RHEINGOLD* SHOOTS UP THE RHINE FROM ROTTERDAM TO BASEL.

HIS EUROPEAN PEREGRINATIONS. THIS TRAIN, WHICH *JUPITER* OBLIGINGLY PULLS, SHOWS STRONG TRACES OF ALOFT AND THE BAGGAGE TOSSED INFORMALLY ON THE ROOF

who is known for his keen perceptions in both industry and art. The layman might suppose that Mr. Woodin had a stable industry: than a freight car, surely nothing is more essential to the present order of civilization. But actually the steadiest thing in Mr. Woodin's business has been the decline of its net income. The pat explanation is that fewer and fewer freight cars are ordered because the railroads are becoming yearly more efficient and economical in the use of their rolling stock.

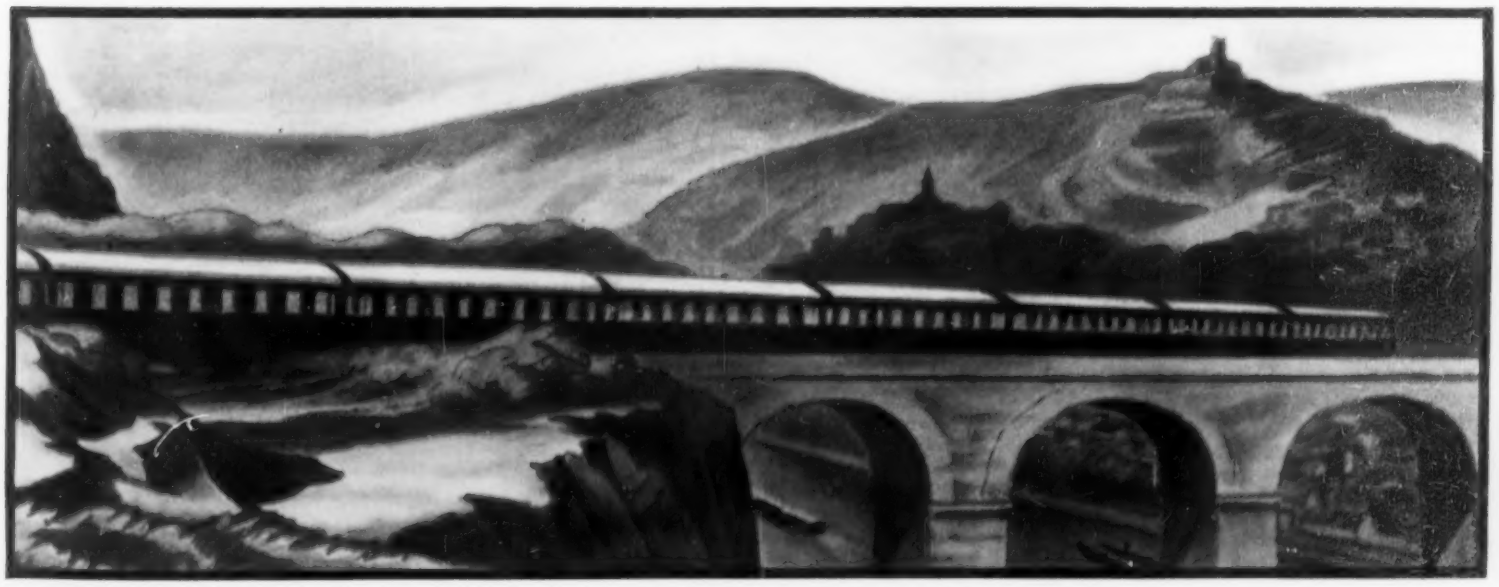
There are other reasons. The motor bus, for example, has taken much short-haul traffic and, relative to mileage, more freight cars are required for short hauls than for long hauls. But, whatever the reason, the fact is that the car-building industry is overbuilt. There are too many car-builders. A. C. F.'s plants alone have an annual capacity of 110,000 cars, which is within 14,000 of the total number ordered last year. A. C. F.'s competitors, chief of which is Pullman Car & Manufacturing Corp., could undoubtedly turn out many times 14,000 freight cars a year.

And, to make matters worse, the sword that dangles over the industry's head is the ability of the large railroads to make their own cars. Last year the Pennsylvania (which manufactures less of its own rolling stock than some other roads) made 2,000 box cars in its own shops. Nearly all the large railroads claim they can make cars as cheaply as the regular car-builders. And cheaper—for a good reason. Railroads must, of course, have repair shops. Repairing amounts to rebuilding. When these shops are not working at full time in repairs, they can work full time building. Thus exactly unlike the car-builder, whose business fluctuates violently, the railroad shops can, theoretically, keep evenly busy year in, year out. This year, for example, Baltimore & Ohio is doing much building because traffic (and hence repair) is not so heavy. Smaller railroads, however, and western railroads which do not have big central shops must buy from A. C. F. and the other smaller builders. But it is conceivable that even this situation may be altered. For smaller railroads might merge their shops. For example, Spokane has five railroads and five railroad shops. Only one of them, the Great Northern's Hilyard (Hill-yard) is of great magnitude. If all five shops were merged into one huge shop, then all the Spokane-entering railroads would make cars in it.

Meanwhile, A. C. F. keeps going. The small roads must come to it for cars. The large roads often choose to do so. For A. C. F. is a large shipper. In order to get business from A. C. F. in the form of traffic, the big eastern roads continue to give A. C. F. business in the form of car orders.

But even if a Twenty-first Amendment to the Constitution should forbid railroads from making any cars, the troubles of A. C. F. would not be over. For the freight car is a pitiful creature. Sentimentally it is the classic example of man's ingratitude to man's

[*Continued on page 84*]



LIMITED AS THE *RHEINGOLD EXPRESS*, SHOWN HERE PASSING COBLENZ CASTLE. LIKE A PURPLE METEOR IT CARRIES NO DINERS; EVERY TWO CARS HAVE THEIR OWN KITCHEN

Pullman

Notes on a company which supplies the cream of rolling stock, which bravely attempts the impossible, and which is responsible, finally, for that ultimate luxury in travel by land—the private car.

THE Pullman Company cannot keep trains from moving or stopping, or the passengers from snoring. It cannot make the same car warm for the long anæmic lady and cool for the fat lady who travels thereon at the same time. The best that it can do is to strive for a norm in such matters as temperature, admit that it must displease some people, and try to give much good service. This the Pullman Company does. The fact that dressing and undressing in uppers and lowers is perhaps the most uncomfortable performance known to the United States remains to the company's discredit. The fact that all European sleeping cars are compartment cars remains a European joke at the expense of Americans. Perhaps the Pullman Company will some day alter these facts—it already has compartments and compartment cars. It should be a great incentive to the company that after so many years of creating improvements, there is still room for more.

• • •

Go to Detroit, Dearborn, and watch Chryslers and Fords being born in countless numbers. Go to Pullman, Illinois, and see a far different sight. No mass production, no standardized product. Last year the company manufactured 281 Pullmans and 100 diners. And most of the Pullmans were different. There are at present twenty-seven different kinds. And they are known by name, never by number. The diners are different from Pullmans in that diners are sold directly to the lines. The company owns all Pullmans. Pullman, therefore, is both a manufacturing company and a common carrier.

But a company official, unusually sensitive to words, might demur at the category of common carrier. For Pullman is, after all, a luxurious carrier. And even if one should happen not to sleep well in Pullman sleepers, one dare not deny the comparative luxury of parlor cars, club cars, observation cars. In dollars the creation of this luxury amounts to $20,000, the average difference between the cost of a Pullman and the cost of a day coach. For Pullmans, it is seven coats of paint, requiring from seventeen to twenty-three days. It is insulation made of cattle hair or wood fiber. It is the workmanship of 712 men on each car. It is pillows stuffed with goose feathers which come from Serbia and China, spring mattresses with horsehair tops. It is great and labored testing in a laboratory where exists, for example, a machine that gives 100,000 double rubs to all samples of plush, more rubs than posteriors could give a seat in many a year.

• • •

The Pullman Company does not advertise. Railroads do. Sometimes the railroads have murmured objections. Does not Pullman derive benefit from the trade engendered by the lines' advertising? To the murmured question, Pullman offers no reply. But is not the public apt to forget, when a line advertises a luxurious train, that the entire train with the exception of locomotive, diner, and baggage car is Pullman-owned? Would not Pullman advertising of this fact take away from the glory of the line's advertising? To murmured questions such as these, the railroads offer no reply. The Socratic method nullified, questions but no answers. One arrives nowhere, but one sees both sides.

• • •

Shriners like luxury. For their conventions they require 900 Pullmans. But the Eucharistic Convention of 1926 needed more.

BUDGET FOR THE PROSPECTIVE OWNER OF A PRIVATE CAR

INITIAL COSTS

COST OF CONSTRUCTION		$80,000
(The Pullman bill may be for as much as $100,000. Refund will be made after exact costs have been compiled. Pullman bills for cost plus 15 per cent profit, plus allowance of 175 per cent for direct labor for overhead.)		
SILVER		500
ADDITIONAL FURNISHINGS AND DRAPES		5,000
CHINA AND GLASS		500
LINEN, BLANKETS, SILK SPREADS		1,750
KITCHEN UTENSILS		100
TOTAL		$87,850

UPKEEP

SALARIES *(per year)*		
Steward	$2,400	
Chef	1,800	
Waiter	1,500	
		$5,700
RAILROAD CHARGES		
(Depending, of course, upon the car's use. Here it is figured that the car's habitat is Chicago, that it makes one trip to the Kentucky Derby, one trip to the Yale-Harvard boat races, one trip to Pasadena, three trips between Chicago and New York, two trips to Washington, one trip to Hot Springs, one trip to Quebec, and one trip to Jaspar Park. The remainder of the time it is paying parking charges in the yards.)		
Tickets	$20,219	
(Twenty-five for each trip)		
Surcharge	2,021.90	
(10 per cent)		
Parking	681.60	
($3.60 per day for first seven days; $12 a day thereafter)		$22,922.50
FOOD		
Passengers	$750	
(average five)		
Allowance for crew		
(Depending again upon whether the owner maintains a full crew, or takes on the chef and waiter when needed. In general, however, it will be found more satisfactory to keep a full crew. At $3 per man per day, crew's food will cost . . .)	3,285	
		$4,035
PARKING CHARGES FOR PERMANENT STORAGE		$576
(Usually at $2.40 per day. After trips are subtracted, total days in Chicago storage are 240.)		
TIPS		$500
(Station masters, yard masters, and their assistants must be tipped.)		
TOTAL		$33,733.50
TOTAL COST FOR FIRST YEAR		$121,583.50

Heat. Than any restaurant, living room, hotel lobby, a Pullman car has more sides exposed to the elements—six in all. Cars are heated through a train-line supply. There are seven units of heating service in a sleeping car. Paradoxically this advantage makes for a difficulty: the human element of the porter who regulates the heat as he thinks best. He may turn on one, two, or any number of units. But again how can he hope to satisfy both the anæmic lady and the fat lady? The new *Yankee Clipper* of the New York, New Haven & Hartford dispenses with the porter's human element. It carries a sort of thermostat which regulates heat automatically. The complaints of the fat lady and the anæmic lady may have less effect on a thermostat than on a porter, but they are none the less sincere.

. . .

The Pullman is a fillip to American traveling; it is the holder to the cigarette, the extra pair of pants, if you will, to the suit. But the Pullman is no extravagance. In Europe one has first, second, third class. In America one has the day coach and the Pullman. The Pullman is simply a more pleasurable way of traveling. In some newspapers Pullman is not a proper noun. The extravagance that Pullman makes is only one—the private car.

. . .

There are less than fifty in the United States. Some of them have cost $70,000; it costs half that amount to have and use one for a year. It sometimes takes four years to build one. They are fun to ride in. Their great, great attraction is that they insure privacy. Yet few of their owners ever ride in them alone. The high year for building private cars was in 1926, when fourteen were built, including five for the Mexican Government (the largest single order). Among the five was a most unusual private car designed only for transporting automobiles.

The list which follows includes not all but most of the existing private cars and their owners. The owners are corporations sometimes, or individuals. They use their cars for business or pleasure. There is no link other than wealth between them.

Culver Service

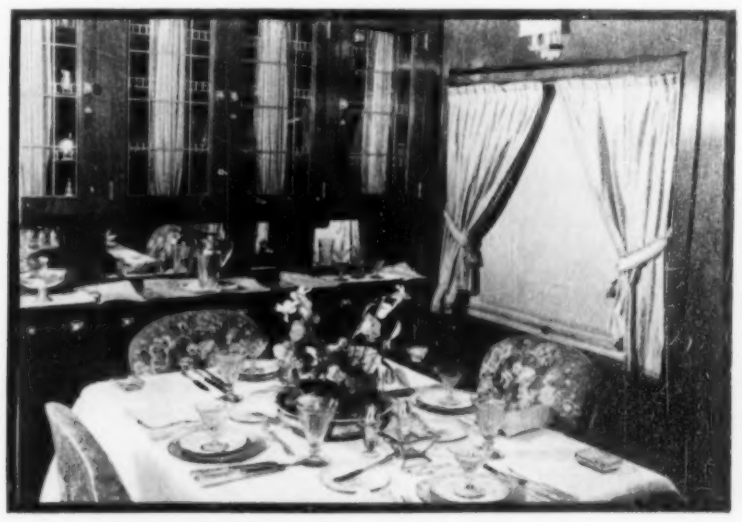
AN EARLY SLEEPING CAR, IN ITS DAY THE LAST WORD IN TRAVEL DISCOMFORT

PRIVATE CARS AND THEIR OWNERS

Anaconda Copper Mining Co.	*Anaconda*
Paul Block	*Friendship*
Nicholas F. Brady's estate	*Adventurer*
Albert Burrage	*Alicia*
Charles Clark	*Errant*
Herbert Coppell	*Mañana*
Richard Crane Jr.	*Nituna*
John S. Cravens	*Nomad*
J. P. Donahue	*Japauldon*
Major Max C. Fleischmann	*Edgewood*
Henry Ford	*Fairlane*
E. Palmer Gavit's estate	*Anacapla*
General Motors Corp.	*Pheasant*
E. G. Grace	*Bethlehem*
Edward S. Harkness	*Pelham*
E. F. Hutton	*Hussar*
Wm. F. Kenny	*St. Nicholas*
Edward B. McLean	*Enquirer*
John Raskob	*Skip Away*
Jacob Replogle (formerly belonged to J. S. Cosden)	*Roamer*
John Ringling	*Jomar*
Walter J. Salmon	*Mereworth*
Mrs. Elmer Schlesinger	*Ranger*
C. M. Schwab	*Loretto*
Harry F. Sinclair	*Sinco*
Wm. Boyce Thompson	*Alder*
John A. Vietor	*Vietwood*

Paul Hesse

OVERSTUFFED CHAIRS AND GAY CURTAINS IN THE DRAWING-ROOM



THE DINING ALCOVE IN THE PRIVATE CAR ANALYZED ON THIS PAGE

Harry Payne Whitney	*Wanderer*
Mrs. Payne Whitney	*Adios*
Joseph E. Widener	*Lynnewood*
Wm. H. Woodin	*Berwick*

. . .

If you cannot buy a private car, you can rent one. The minimum charge is $175 for one or two days. If you keep it for more than three days, the charge is only $75 a day. These charges include the porter, a cook, a waiter, linen. But there are other charges. For food you pay its wholesale price plus 25 per cent, which compensates the company for preparing it and for what you do not eat. To the railroad you pay twenty-five fares plus a 10 per cent surcharge, or 50 per cent of twenty-five Pullman lower berth fares, whichever is the less amount. If you want to stop for a while and use the car as a hotel, the railroad charges for parking in accordance with its tariff; the charge runs from $12 to $15 per day. All this is apt to mount up.

. . .

Forgotten is the first great Pullman car, *The Pioneer*. But in 1865 it was the talk of the town. George Mortimer Pullman spent $20,000 building it, and he made it too high and too wide. Undaunted, however, he persuaded railroad men to remove the sides of a bridge or so, to tear down a few obstructing platforms, and after that *The Pioneer* was no longer wide nor high. One of its first distinguished passengers was Mrs. Abraham Lincoln, who rode in it one night from Chicago to Springfield, Illinois, to attend the funeral of her husband.

. . .

Pullman personalities: the Pullman Company does not like to be subdivided into personalities. It prefers to be thought of as an integrated whole; credit for any of its actions goes to the entire company rather than to any single individual. To inquiring reporters Pullman grimly preserves its impersonality. Publicity is not even given to the company's president, shrewd, laconic David Anderson Crawford, high seventies and low eighties golfer, resident of Evanston, whose first job with Pullman was secretaryship to the late Pullman President Carry.

Vice president and general manager of the company is Louis Sextus Hungerford, who in 1878 was a sleeping car conductor on the Rome, Watertown & Ogdensburg road. One of the oldest of the company officials, he, with tender reference to his middle name, calls himself "the old Roman of Pullman business." It is said of him that he once walked into a Pullman washroom and discovered a porter shining fixtures with a most egregious diligence, that when he inquired as to the reason for this activity the porter without looking up replied, "The bull with the long horns is on the train, but he ain't gonna catch me." For the first and only time in his life Mr. Hungerford was rendered speechless.

Perhaps the most colorful of Pullman personalities is that of Vice President James Keeley, who once as a newsboy sold newspapers to Gladstone and later, as the owner, sold the Chicago *Herald* to William Randolph Hearst. An idiosyncrasy of his is to cut the ends of the cigars which he smokes with a pair of scissors. The kitchen of his apartment in the Ambassador Hotel is decorated with colorful culinary cartoons, not the least noteworthy of which is one showing an amorous asparagus making love to a blushing bunch of beets.

. . .

In the Pullman Company the Mellon interests are represented by James Frank Drake, chairman of the board of Pullman, Inc. (holding company) and by R. K. Mellon, a director and president of the Mellon National Bank. General Motors is represented by the lean person of Mr. Alfred P. Sloan Jr., lover of grand opera who has a great aversion to getting his hands dirty. And the Morgan interests are represented by Director J. P. Morgan (also George Whitney). Of interest, too, are the names of Directors Harold Vanderbilt and George F. Baker Jr.

. . .

It should be stated that Mrs. Frank O. Lowden, daughter of the late George Mortimer Pullman, never, though thousands have believed that she did, named a single Pullman car. (It was Richmond Dean who achieved the brilliant record of naming 300 Pullman cars in twenty-four hours. He did so by dispatching a phalanx of assistants to the public library and having them copy virtually every old Roman and Grecian name of which there was record.)

. . .

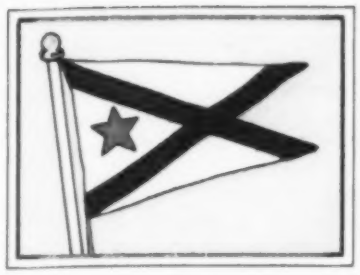
Perhaps, however, Pullman does give publicity to one personality. He is Passenger Manager Howard P. Clements, and his signature appears on each and every Pullman ticket.

International

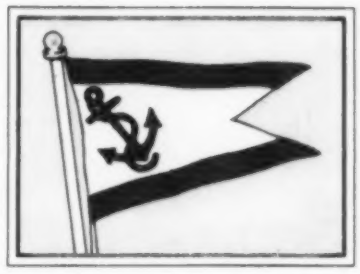
HERE SLEPT THE QUEEN OF BELGIUM EN ROUTE TO HER DAUGHTER'S WEDDING

Pullman Co.

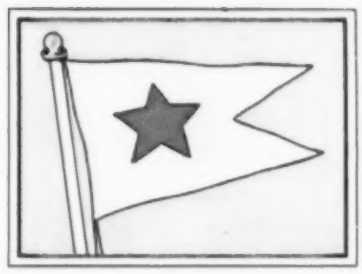
HERE EATS THE PRESIDENT OF MEXICO WHEN HE TOURS HIS PROVINCES



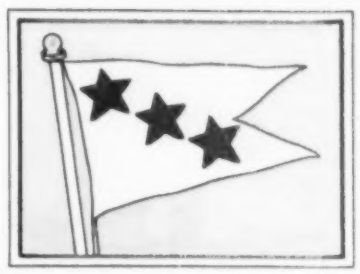
HAROLD VANDERBILT



WINTHROP W. ALDRICH



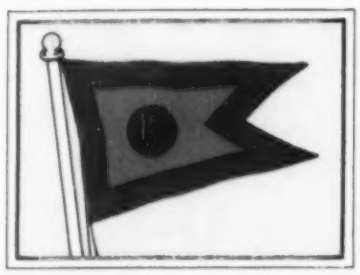
VINCENT ASTOR



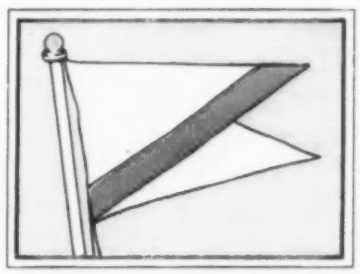
GEORGE F. BAKER JR.

Yachts for the Race

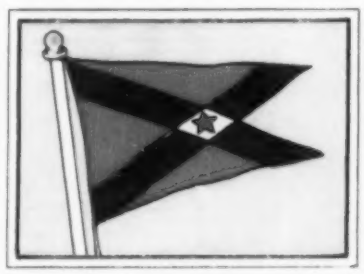
A naval conference at Newport. Marconi rigs for all cup yachts. The syndicates summon Lawley and Herreshoff to answer a tea man's challenge.



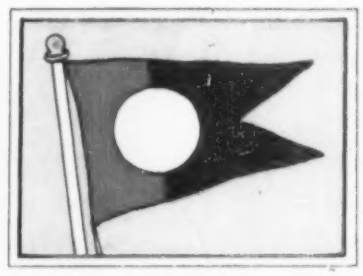
FLOYD L. CARLISLE



OGDEN L. MILLS



E. WALTER CLARK



GEORGE WHITNEY

YACHTING is a ceremonious and expensive diversion. It has to do with yacht club bars, oilskins, silver flasks, dances, Newport, halyards, cleats, sunburn, rubber-soled shoes, and the Astor Cup.

Cup defending is an even more ceremonious and expensive diversion. It has to do with Herreshoff's, Ratsey's lofts, mahogany, core boxes, wax, Lloyd's, displacement, City Island, designers, Lawley & Son, Sitka spruce, and syndicates. And most of the time, Sir Thomas Lipton.

It was on May 28, 1929, that the Honorary Secretary of the Royal Ulster Yacht Club mailed the challenge to the New York Yacht Club to race for the America's Cup. It was Sir Thomas Lipton, Bart. who was named as the challenger's owner. He was planning a new *Shamrock*, green like the others, and with quite the tallest mast ever seen. When the New York Yacht Club discreetly let it be known that it had received the English club's challenge, eager sports writers quickly telephoned to inquire whether and when it would be accepted. That day the club was ever so dignified; there must be no haste, and there was no further news. The telephones did not even answer. It was on June 10, 1929, that Secretary Cormack ceremoniously informed that same Honorary Secretary that the challenge had been accepted. And thereupon began a great activity which kept perhaps 1,000 U. S. citizens busy and which filled, each week, more space in the sports pages of the newspapers. Not until the race itself would become imminent would the yachting news splash across the first pages. But the preparations for the race, the actual process of creating the defending yachts quickly became important or at any rate interesting. And not the least interesting happening was the prompt formation of rich demiurgic syndicates whose function it was to finance and thus create the yachts which might best *Shamrock V.*

I—The syndicates

Four were formed last summer. To create them, there was tapped every available source of sportsmanship and wealth.

To the Morgan syndicate came George Nichols as skipper and managing owner, and Henry Walters, Cornelius Vanderbilt, Arthur Curtiss James, Junius S. Morgan Jr., Gerard B. Lambert, and George T. Bowdoin, each name synonymous with yachting and the New York Yacht Club. Clinton Crane, the genial head of St. Joseph Lead Co., who still remembers his years as naval architect and who still finds time to complete line drawings for at least one boat a year, was selected as designer. Three models were made for the selection by the syndicate; one was chosen and was named *Weetamoe*. The vital part of this boat was done; only the actual construction and the bills remained between her and the sea.

A second syndicate, to be known as the Vanderbilt group, began to take shape. Harold Vanderbilt, member of the syndicate which backed *Resolute*, the last successful defender, three-times commodore of the New York club and owner of the cruising yacht *Vagrant*, which managed to run off with the Astor Cup three years in spite of competition with more decided racing schooners, heads the syndicate as skipper and managing owner. Following him are Winthrop Williams Aldrich, Vincent Astor, George Fisher Baker Jr., Floyd L. Carlisle, Ogden L. Mills, E. Walter Clark, and George Whitney. No less famed are these men as yachtsmen. Mr. Aldrich, new to the defending game, acts as vice commodore of the New York Yacht Club. Vincent Astor, who early this spring sailed to the Galápagos Islands in his yacht *Nourmahal*, has been commodore of the New York Club since 1928. E. Walter Clark, who now owns *Resolute* and plans to sail her against these four boats this year, is one of the outstanding yachtsmen in the country. George F. Baker Jr., another member of the *Resolute* syndicate ten years ago, owns the ocean-going steam yacht *Viking*, and this spring sailed the Mediterranean in her. And the others, if new to the defending game, are well-known in the yacht clubs and in entry lists for regattas. Their boat, *Enterprise*, is built from the plans of W. Starling Burgess, son of the Ed Burgess who designed the former cup defenders *Puritan*, *Mayflower*, and *Volunteer*.

A third syndicate, midget-sized in membership compared with these other two,

is the Landon Thorne-Paul Hammond-George Pynchon combination. They commissioned L. Francis Herreshoff, son of the great Nathanael, to draw up the plans, with the resulting *Whirlwind*. And the fourth, known as the Boston syndicate, was formed by John Lawrence, Chandler Hovey (father of the Josephine who races in this country and contemplates the same in England this summer), and Frank C. Paine. The latter, the son of that Charles Paine who owned and managed the defenders designed by Ed Burgess, has made the line drawings for their competitor, *Yankee*.

The mere listing of these names tells probably as adequately as is needed one chapter of the story of yachting. Certainly few sports in the United States number among their devotees a list of families as distinguished in wealth and position. This is necessarily so. Not much less than $1,000,000 had to be made available by each syndicate. It is so also in England though Englishmen have sometimes wished that the *Shamrocks* did not seem to be quite so connected with the sale of tea. But since the King's yacht has never hesitated to sail against a *Shamrock*, such objections are obviously stilled.

II—The builders

Four syndicates then were formed, four plans made, and with the completion of the plans, the builders had to be chosen. Henry Nevins, of City Island, was an excellent builder, but his yards were not large enough to permit the building of any of the four. The Bath Iron Works had built good boats and was even then constructing J. P. Morgan's new steam yacht *Corsair*. But standing before all these were Lawley and Herreshoff. Both firms of old standing and fame, fully equipped for the construction of boats such as these, they were selected—Lawley for *Whirlwind* and *Yankee*, and Herreshoff for *Weetamoe* and *Enterprise*.

Photographs by Scandlin Studios

HUNDREDS OF LABORIOUS STITCHES BIND EVERY DEFENDER SAIL,

John Herreshoff went blind at fourteen, but fifty years after that he could still tell you, running his hands over a small ship model, why she was a fine boat. He started his shipbuilding company at Bristol, Rhode Island, in 1863, attending mainly to the administrative management. His brother Nathanael drew up the plans for him in leisure hours. Some fifteen years later the business had grown so large that Nat left his other position and allied himself permanently to the Herreshoff company, drawing designs for most of their boats. He is still associated with the Herreshoff yards although his family has long since ceased to direct their activities and his son has his own office at Gloucester. A fine old man, every spring he hastens back to Bristol from the South, to visit the yards every other day and utter shrewd and biting criticisms of the way things are going. These visitations are neither resented nor ignored because R. F. Haffenreffer, who is now president of Herreshoff, regards the surviving Herreshoff partner as a splendid designer and one of the ablest builders in the country.

The Herreshoff firm has been sold twice since John B. died in 1915. R. F. Haffenreffer bought it at auction the second time in 1924, and many of the old stockholders still hold their shares. Long honored as a master in shipbuilding, turning out as trim a boat as could sail the seas, excelling in steel work, the firm in its new management continues the fame that has been its for sixty years, still influenced by the genius of the two Herreshoff brothers. Except for the acceptance of more modern methods, for the installation of mechanical conveniences, for the general tightening up of the company into greater industrial efficiency, it remains as of earlier years.

The sheds, sprawling along the clear shore of Narragansett Bay, are redolent with the smells of brine, shavings, and turpentine. Office windows, surveying the spread of shops, are primly curtained in sailcloth. Off in one corner of the yards is the shed where the small boats, stock in trade, are built. Beside it, the carpenter shop, where yacht fittings are meticulously groomed. Farther on the foundry, where the bronze plating is pressed out, the steel frames are formed. Close by is the giant furnace, from whose boiling entrails pours the molten lead to form the keels. And the main shed where the defenders grew.

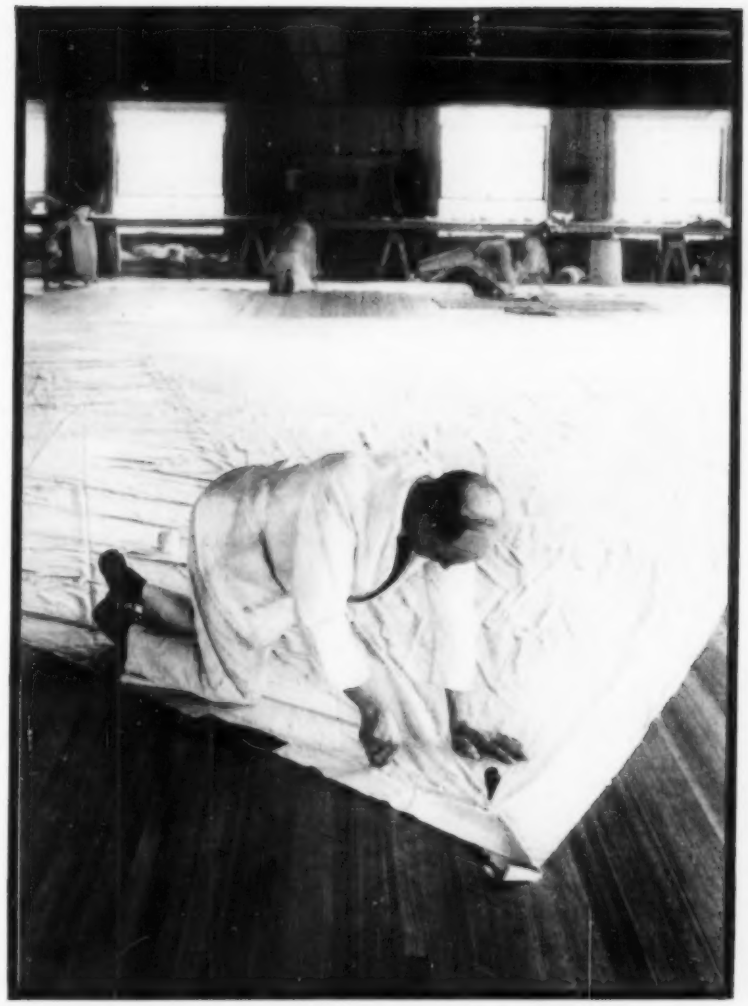
Here they stood, with a slight wooden partition dividing them, their glistening hulls

close neighbors, each the product of long months of careful workmanship. First, to mould the keels. For two weeks the carpenters cut and shape the wooden mould. It must be accurately done, for from this mould would come the finished keel, on whose weight and distribution of weight the balance of the boat depends. Another two weeks and the core box is completed. Then to pour the keels, with the molten lead running from the scorching furnace—this no more than a day's job. After a four days' cooling, the keel is completed and ready for the keel plate.

A metal plate, to cover the top of the keel, is affixed, and then the stem and the horn timber. With this the bare silhouette of the boat has taken shape, and the filling-in can commence. From the foundry are brought the steel frames, each forged to its proper weight and measurement, which are affixed to the plate and form a metal skeleton. There, too, the bronze platings have been rolled into shape and are ready to fill in the outer skin. These have been carefully formed, with the bend pressed from the heavy machines. Accuracy is vital; if the platings are off measurement in the slightest degree, the essential symmetry and balance of the boat is lost. When a second bend is required for some of the plates, it is hammered into shape by hand—no machine can create two varying curves in one piece of metal. This is the most difficult and most careful operation of the whole building process.

To fix on this covering, the plating is first bolted on, a temporary proceeding. Workers then clamber about the sides of the boat, drawing out the earlier bolts and with a great din drive in the rivets which are the final pins; saw off, with a sharp mechanical clatter, the short ends which protrude beyond the even sides. The work after that is much of a finishing nature: to complete her interior, which in the case of the defenders is no more than an almost hollow space; to lay the white pine or teak decks; to paint her sides above the water line; to append the necessary fixtures. She now waits only for her masts and sails.

The process at the Lawley yards was very much similar to that at the Herreshoff. Lawley, old in the trade as is the other builder, duplicates the Herreshoff history in many ways. The Lawleys now have small interest in the firm which carries their name and which was founded by George Lawley in 1866. Thomas Hibbard, for many years treasurer, is president of the George Lawley & Son Corporation. He has been with the firm for more than thirty years and, at the time of the second and final migration of the



LAYING THE CANVAS FOR CUTTING

company, bought the yards at Neponset, bargaining for the shore acres as old George Lawley, the president of a rich firm, would have been unable to do. With the new management increased industrialism has set in, and now the yards are mechanized as far as possible.

Stolid, heavy looking, the sheds spread out along the water. At the dock, ready to sail when her fittings are completed, floats a brigantine. In one shed are the six and eight meter sloops that may even sail in the Internationals; in another, racing sloops that are

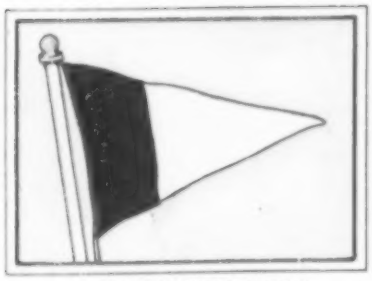
A CLEW CRINGLE TO REPEL STRAIN

to sail in England this summer; in another, power boats. Over by the water is the defenders' shed, large enough for the two boats to build, side by side. Larger than Herreshoff, Lawley seems less disturbed by the order for the defenders. One hundred men can well be spared from their normal five hundred men; one hundred from the two hundred at Herreshoff's caused a slight interruption.

At this yard was built *Whirlwind*, the only one of the four boats to veer from the bronze-plated sides. She is double planked with wood. L. Francis Herreshoff, her designer, explains amicably that he was forced to this because all the skilled bronze-workers available were used up on the first three boats, whereas Lawley still had a supply of excellent ship carpenters. A much longer job than that of plating, the narrow strakes of fine Honduran mahogany are fastened to the steel frames, in two skins to insure water-tightness and stiffness. The other boat, *Yankee*, shows a divergence from the others in her keel, using inside ballast in a bronze plate shell in place of the solid lead keels on which the other defenders were built. Her steel frames follow the final lines of the boat, the bronze plates affixed from deck to rabbet. When she is almost entirely plated with the metal, a small space remains uncovered down in the keel of the boat where great lead pigs are laid and braced. This forms her ballast and must be carefully placed to insure proper trim of the boat. Then the remaining plates are riveted on, and after the rudder has been hung and the decks laid, the body is done. There is small difference in weight of the different boats this year. Both American and English boats are being built to Lloyd's scantling rules, which regulate the exact weight and size of the component parts of the boat, in accordance with her class.

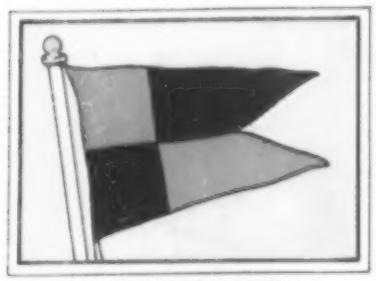
III—The rigging

The boats are now ready for their spars and rigging. *Yankee* had two of her masts constructed at her builder's yards; *Whirlwind* had one done there; *Weetamoe* left one for Herreshoff. But the others—two for *Enterprise* and the accompanying spars for *Whirlwind* and *Weetamoe*—were built at Henry Nevins' yards in City Island. There in a long shed, set up to fit these defenders' masts, the longest ever stepped in racing yachts, the spars were made. A cup defender's mast is hollow and elliptical, a sort of wooden pipe tapering to a solid tip, and it takes six men about two months to build one. First, twenty-foot-long strips of Sitka spruce are joined together with

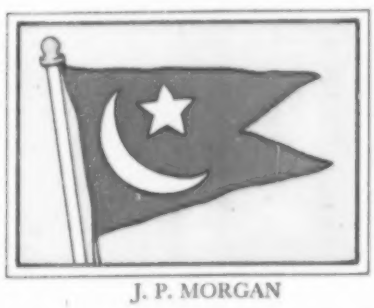


GEORGE NICHOLS

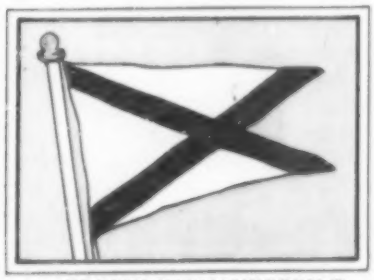
ARTHUR CURTISS JAMES



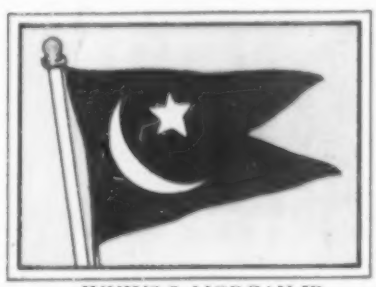
HENRY WALTERS



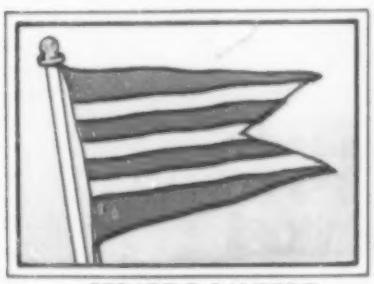
J. P. MORGAN



CORNELIUS VANDERBILT



JUNIUS S. MORGAN JR.



GERARD B. LAMBERT

SIR THOMAS LIPTON, BART.

glue into the long cone-shaped shafts, four of them to a mast. Each segment of the oval is then planed and cut away, leaving an outer shell which in some places is little over three inches thick. A thin colorless glue, made from the white powdered casein glue dissolved in cold water, is painted on the parts to be joined; the sections are pulled together, tightly clamped with metal vises, and stretched over the long row of wooden horses which have been minutely measured and nailed to the floor that the surface may be perfectly straight. There the mast stays for days, with the constant pressure pushing out every excess drop of glue and pulling together the wood surfaces to touching point. After it has been painted, the mast is ready to be hauled by the massive derrick and stepped in the boat.

IV—The sails

At the same time that all these other processes have been going on, sailmakers at the Ratsey & Lapthorn lofts have been cutting and stitching the canvas under which the defenders will sail. The company started at Cowes, England, in 1790; prior to that time the Ratsey family had been shipbuilders. Almost every male Ratsey since then has continued in the firm, with the exception of a few renegades who joined the navy. At the present time there are five lofts: the original one at Cowes, one at Southampton, another at Gourock on the Clyde, a fourth at Gosport, and their American branch at City Island. This year they are making all the sails for both the defenders and the challenger, *Shamrock V* sails being made at the Gosport branch and the American sails at City Island, which is now their largest unit.

This loft was started in 1901 by the Ratsey who now manages the plants in England. They rented an attic from Robert Jacob and stayed there for a number of years. But it gave them very little room, so they built for themselves. The plant now is pretentious for a sail loft: a three-storyed white wooden building about two hundred feet long. George Ratsey manages it, assisted by his two sons, Colin and Ernest. Ernest's small son, now four years old, is already counted as the sixth generation in the firm.

The sails for the American boats are made of Sudan and American cotton: Sudan for many of the most important sails, because it has a longer staple, more strength. On the top story of the shop is the cutting room. On the floor is chalked off, by the use of taut ropes, the measurements of the sails, and the canvas is cut to fit. For the tremendous mainsails, the canvas is spread the length of the room, eliminating all other work for the while. Sharp, stiletto-like instruments nail down the cloth as it is cut. Then down the chute to the sewing rooms. In the case of large sails, they are entirely sewn by hand, from eighteen-inch strips of canvas. With small sails, the strips of cloth are wider and are sewn by machine. The handwork is all done on the second floor. There some fifty sailmakers, resplendent in white overalls, thread and stitch. They wear soft work shoes; street shoes are forbidden to worker and visitor alike as the dirt trampled in from the gravel roads will soil the canvas. Seated at rows of benches as if in a kindergarten, the men sew together the strips which form the sails. Each has his kit of instruments: heavy, strong needles which can pull through the tough cloth; sharp, pointed gadgets which will force a hole if the material is at all combative; two bands made of hide, with a metal-studded portion in the palm of the hand, which act as thimbles; a huge chunk of wax. So much wax has been used for so many years that the floor of the sewing room is as shiny as an old oak floor, and the sailmakers, stitching in their white suits, are jauntily reflected in its polish.

On the floor below, the machine work is done. Two rows of tables line the center of the room, with a girl at each one. Their stitching is as straight as if it were drawn to a line. In another part of the floor, the ropes for the sails are wound, each in wire, or they would slip in the canvas. When all except the sewing on the curved edge of the sails has been done, the canvas is sent back to the third story, where the cutters crease down the edge. From years' experience they are able to mark the curve without the use of a form of any sort, knowing instinctively where the line will fall. Workers spend an apprenticeship of five years before they become cutters or sewers.

Great metal plates have been inserted in some of the corners of the large sails to give strength for the pull of the ropes. In the smaller ones, the holes for the rope have been bound with a hemp and metal grommet. After the final sewing has been completed, the sails are folded up, carried out, and carefully placed in the new fireproof storage shed which the Ratseys had built just for the defender sails. It is large enough for the full width of the mainsail to be extended without a fold. There the sails waited for the boats to be done.

With the launching and then the rigging, the boats have passed the last stage before trying the water. The mast on the *Enterprise*, the first boat done, was stepped at the Jacob's yards in City Island. There a Merritt Chapman wrecking lighter was towed to the pier where the spar lay on wheel carriages. With cables, the stick was hoisted and dropped into position. The rigging was then completed in one day, a phenomenal performance.

Now the four boats may be seen sailing somewhere between New York and Boston. This month they will be sailing in observation races off Newport. But not until late in August will the trial races be run to determine which one of the four will be chosen as the defender to sail against *Shamrock V*. At that time will come the climax in the lives of three of them, the added test to the fourth; one man's plans will be tilted against the others; Lawley's workmanship against that of Herreshoff. The year's preparation will be consummated for most; for one, the final and finest Cup Race remains.

Marconi Rigs

With which the inventor has nothing to do.

NO ONE knows when first the name was applied except that it could not have been more than twenty-nine years ago because before that time there were no Marconi wireless masts. The incident, like most which make for nicknames, is unrecorded officially, but legend has it that it was an aged and observant lady, back from her first trip to Europe, who spied a sailboat with a now-called Marconi rig and exclaimed: "Look at the boat with the Marconi mast!" The parallel was obvious. The rigging in question, with its ganglia of struts and wires, did look like a Marconi wireless mast. And so the name stuck, giving the rig, which actually was no new thing, a decided flavor of modernity. Senator Guglielmo Marconi had nothing to do with it (any more than he has to do with Marconi cigars). He has, however, undoubtedly sailed on yachts which had Marconi rigs. But aside from that, it is impossible to trace any connection between the inventor and the rig which commonly bears his name.

• • •

Wherever the America's Cup races are discussed, we are sure to hear more or less about the Marconi rig. Or perhaps it will be termed the "jib-headed" rig. Or, again, the Bermudian rig. To the tyro, these terms mean little and are therefore more or less confusing. And yet it is all so simple. For, whether you prefer the term Marconi, jib-headed, or Bermudian, it all comes to the same thing—the mainsail, or largest sail, is triangular in shape and replaces the old reliable gaff-headed mainsail, which had four corners and a spar, or gaff, along its upper edge, or "head," to be more nautical. The Marconi is, therefore, simply a three-cornered, gaffless sail.

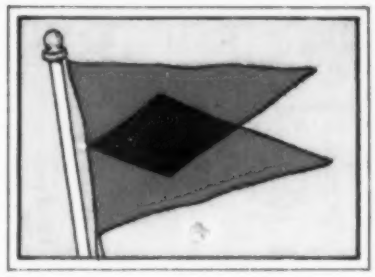
The change from gaff-headed mainsail to jib-headed mainsail was made comparatively recently when it was discovered, shortly after the War, that the latter type of sail was a more efficient driving unit than the gaff-header. Aërodynamic theories proved it. Actual tests proved it. And today practically all racing yachts carry a jib-headed mainsail—and many cruising craft as well.

However, it is not quite so simple as it seems, this change from gaff-sail to triangular sail. For in place of the old mast and topmast came a single towering spar, taller in some cases than mast and topmast combined in the former rig. And the strains came in different places. Masts were lost, and still are. But our designers, with several years experience behind them, have evolved spars and rigging plans which are remarkably light and efficient.

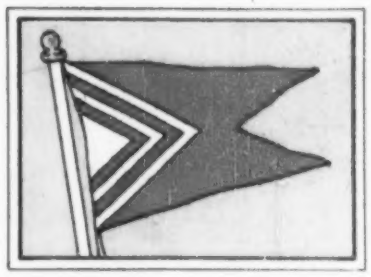
All the four aspirants for the defense of the America's Cup, and the challenger also, will carry the Marconi rig. They have no choice in the matter, for it is so ordained in the agreement entered into between the New York Yacht Club, holder of the famous trophy, and the Royal Ulster Yacht Club, the challenging club. While no announcement has been made regarding this stipulation, there are undoubtedly two reasons for it. First, the tremendous rigs required on the cup boats (the masts are the tallest single spars ever shipped in a vessel of any type, anywhere) were, and still are, the cause of great anxiety. Again, it is barely possible that on these boats the old gaff-headed rig would, at times, be superior. It can easily be seen that neither challenger nor defender would want the other to gain a possible advantage, either in safety or speed, by carrying a different rig. Wherefore the iron-bound rule that both craft must carry jib-headers.

While the mainsails on the cup boats are known officially as "jib-headers," they will be constantly referred to as Marconis or Bermudians. Any, or all, are correct. It is a matter of preference, as no standardized term has yet been adopted in nautical circles or elsewhere. Britishers invariably use the term Bermudian as the rig now used resembles in many respects the rig used for some hundred years by boats hailing from the Bermuda Islands. Actually, we might as well term it the "bugeye" rig, for down on Chesapeake Bay, also for some hundred years or so, they have been using a rig so similar, on both "skipjacks" and "bugeyes," that the differences are hardly worth noting. In fact, triangular mainsails were probably used not long after the Vikings discarded their square-sails for a sail which would be more efficient in sailing to windward, an art which went undiscovered for many years after Eric the Red made his epic voyages across unknown and uncharted oceans.

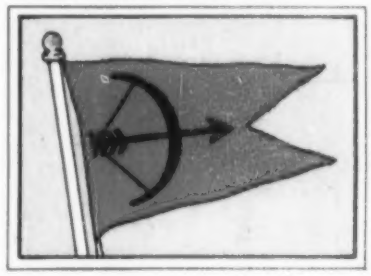
The towering spars on which are set the jib-headed sails are marvels of engineering skill and expert workmanship. The rigging, with its various struts, or "spreaders," has been carefully planned after vast experience with actual rigs has been backed up with scientific tests and experiments. We hear that the rig is dangerous. And there is truth in this claim. For spars and rigging are cut down to the narrowest factor of safety possible, all to save weight. For weight aloft is detrimental to speed, inasmuch as it impairs a boat's stability or sail-carrying power—what weight is saved in the rig may be placed in the keel and the stability increased. And increased stability means increased speed, especially in brisk breezes, and the utmost in speed is naturally what designers are striving for in a craft which is to compete for the blue ribbon of the sea—the America's Cup.



CLINTON CRANE

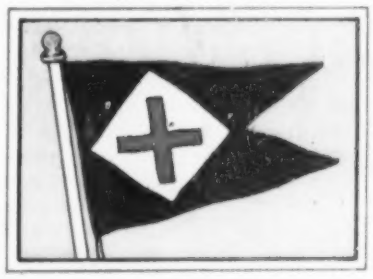


GEORGE T. BOWDOIN



JOHN LAWRENCE

CHANDLER HOVEY



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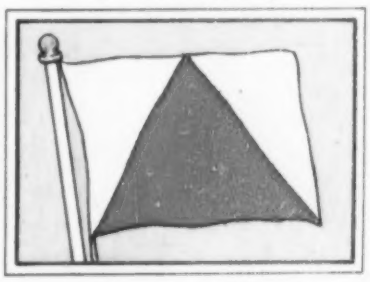

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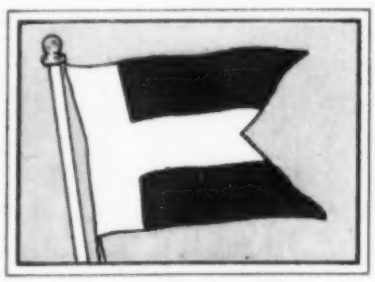
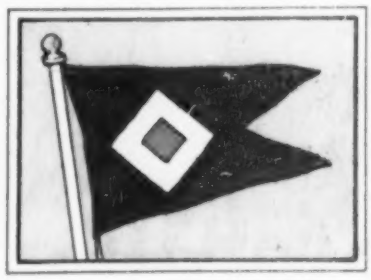


LANDON K. THORNE



GEORGE PYNCHON

The Guggenheims

Getting and spending, they have not laid waste their powers.

PRIMORDIAL man sat upon a junkheap and gazed about him in glee and mystification. That the animal-vegetable-mineral sphere upon which he sat was a treasure house did not enter his head. He named all the animals and ate an apple and moved into a new house, we are told, and died in ignorance of the fact that the youngest son of his great-great-great grandson had found a way of utilizing some of the contents of the junkheap. But Tubal-cain had contrived an alloy of copper and tin that was ductile but strong and had extracted iron from its ore. And he told others how to do the same.

The fact that Tubal-cain worked in copper and brass generations before the flood has not been of particular service to archæologists who desire to locate the surveyor's stakes of the Garden of Eden. For copper is in Alaska, it is in the highest Andes, the heart of Africa, the steppes of Siberia, in Mexico, the United States—everywhere. Gravimetrically, an important fraction of the earth's substance is copper. The world has known that for a long time and has thought nothing of it. Copper has been used in compounding alloys as a baker uses water: to dilute, to "work" the new substance, because it has always been common and cheap. For that reason, also, it has been used for the coins of least value—coins to toss to beggars or to lay on dead men's eyes.

The Forty-niners found copper and passed on, looking for gold. The Mormons in Utah scorned the copper that lay in the world's richest hill, twenty miles from their capital. Meyer Guggenheim, catalyzer of the world's greatest copper fortune, never gave copper a thought until he was over fifty.

Thus it has always been with copper. It has always been an afterthought or a last resort. It is the ugly duckling of the metals, and an upward trend in its securities to superstitious traders is an evil omen. Months before the crash of 1929, oldsters who remembered other serious market breaks said, "Look out. The market's going to break. Coppers are going up. When coppers go up, it is a sure sign." Thousands of shares were traded six months before the crash on the copper hunch.

• • •

Simon des Meier Guggenheim,

P. & A.
MEYER GUGGENHEIM, THE PATRIARCH

his son Meyer, his second wife, and her children came from Langnau, Switzerland, to Philadelphia in 1848. Between those points—family tradition has it that it occurred while their slow-moving craft plowed the Atlantic—Meyer Guggenheim and his step-sister Barbara Myers fell in love, but at the time the importance of that event was obscured by the general importance of the Guggenheim migration. For three hundred years the family had lived in or near Baden. Simon's was an unheard-of action. Some cousins and aunts wagged their heads and said, "Such a thing, such a thing."

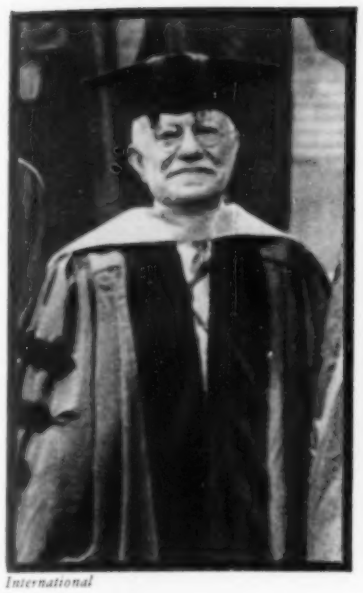
When Meyer was thirty-nine, he had been in America about twenty years. In 1852 he had married Barbara Myers, his step-sister and companion on the voyage from Switzerland. She had borne him eleven children, nine of whom were to survive her. She was a devout woman and a loyal wife. He had founded two successful companies and had acquired a competence. His friends in America and his relatives in Langnau said, "Look at Meyer. Did we not always say he would do well in the new country?"

In 1872, he and M. H. Pulaski began to manufacture and import from Switzerland laces and embroideries. They established factories in St. Gall and elsewhere, and Meyer's sons, the oldest of them now approaching manhood, joined the enterprise. Each in turn was sent abroad to study the business; each in turn was admitted to the firm as soon as he reached his majority. Again Meyer's friends applauded. "Look at him," they said. "In only twenty-five years he has done this."

But Meyer was not satisfied. He said, not once, but many times, "I have seven sons, and each of them will have a million dollars." A step in this direction was to dissolve the firm of Guggenheim and Pulaski and create a new one, M. Guggenheim's Sons. It was a good thing he had not gone off with the gold hunters in '49. At home he had made a million dollars. But he had six to go.

Brown Bros.
MEYER AND HIS SONS—FOR EACH, A MILLION

In 1879 mining operations at Leadville had just begun, but many men had already become millionaires. So thirty years after the Gold Rush Meyer Guggenheim again heard promises of wealth in the West. But he did not at once rise to the lure. Not until Sam Harsh and Charley Graham, fellow Philadelphians, came to him wanting to borrow money to take up a partner's share in the Minnie and A. Y. claims. The shaft of the Minnie was full of water and could hardly be worked. Attempts to work the A. Y. had revealed similar conditions. But there *was* silver in both claims. Harsh and Graham both thought they could get it out. Meyer pulled at his mutton-chop whiskers and



International

Bachrach

AT THE LEFT, DANIEL, NOW THE GUGGENHEIM PATRIARCH; BESIDE HIM HIS WIFE, FLORENCE SHLOSS. AT THE RIGHT, THE HON. SIMON; BESIDE HIM HIS WIFE, OLGA HIRSH. THESE FOUR ARE AUTHORS OF THE GREATEST ALREADY FUNCTIONING GUGGENHEIM PHILANTHROPIES

Culver Service

thought the matter over. Life was not long enough to make his Seven Millions slowly. Other men had made millions in a few months in Leadville. He told Graham that he would not lend the money, but he would go into a partnership.

Meyer, who had driven one of his own spice wagons, was not likely to sit in Philadelphia and let others work his claim in Leadville. He packed up and went to Colorado and found conditions worse than he had anticipated. Then he wrote home to Benjamin, his fifth son, then nineteen and a student at Columbia. He told Benny to come to Colorado and learn about mining at first hand. Later he could go on to college, specializing in metallurgy and engineering. Maybe, thought Meyer, young Benjamin would find a way to smelt sulphide ores at a cost that would leave a little profit for the miners.

Smelting costs did come down, and sooner than Meyer had dared to hope. By '86 a ton could be treated for $7.00 or $8.00. Enormous bodies of sulphide were opened both in the Minnie and the A. Y. and production was sometimes as high as $100,000 a month. The Seven Millions upon which Meyer's eyes had been steadfastly set were at last coming within his grasp.

The lace business was liquidated as rapidly as possible. Isaac was left in charge of that, and the other sons were all called to Colorado. Meyer offered to lend them, at interest, sufficient money to go into smelting. They bought an interest in the Holden smelter in Denver (1886), built one of their own in Pueblo (1888), and founded the Philadelphia Smelting & Refining Company. Benjamin, who had finished his study of metallurgy, became the technician; Simon and William studied sources of supply and the methods of ore purchasing and took over the management of the smelters. Murry and Solomon were sent to Mexico to supervise properties which were rapidly being acquired there and to erect additional smelters. All the brothers had become coppermen.

Throughout the next decade Guggenheim influence and Guggenheim holdings grew enormously, became dominant. By 1899 all other important smelting interests combined and endeavored to persuade the Guggenheims to come with them into the American Smelting and Refining Company. They held out until January 1, 1901, when Daniel's shrewd vision led them to surrender their properties to American Smelting and Refining for $45,200,000 worth of stock *and* control of the company. Daniel, who from the first had been quietly acknowledged as the leader of Meyer's sons, was made president; Isaac, Murry, Solomon, and Simon directors. (The two remaining brothers, William and Benjamin, retired to private enterprises and to supervision of the affairs of M. Guggenheim's Sons.) The sons had acquired all of their father's holdings and had paid back the money they borrowed from him with interest.

Meyer was seventy-two, and each of his sons had his million.

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Thus was created one of the largest—said by some to be the second largest—fortunes in the world. The Rockefellers have more wealth. Henry Ford is wealthier than any Guggenheim. "But," someone has said, "there is only one Henry Ford, and there are a lot of Guggenheims."

Meyer, the patriarch, died in 1905, Benjamin in 1912, and Isaac in 1922, but the spirit of the family remains: "We are Seven." The custom of common council and unanimous consent early established among them was maintained by the Six, by the Five, and now by the Four (William has never rejoined the firm). When they joined American Smelting, Daniel remained either president or chairman of the board continuously

Keystone

AIR-MINDED AMBASSADOR HARRY F., SON OF DANIEL

JOHN SIMON, IN WHOSE MEMORY THE GREAT FOUNDATION

PORTRAIT OF SOLOMON R. GUGGENHEIM

BY SIR WILLIAM ORPEN

P. & A.
ISAAC, OLDEST SON, CONNOISSEUR

Culver Service
MURRY—HIS THE MONEY BRAINS

until his retirement from active business in 1919, when he was succeeded by Simon. It could be said that Daniel is today the solon of the house, but the brothers themselves make no distinctions. The brothers have always had a common office. They meet in it twice a week. All important decisions must be unanimous.

. . .

These meetings and these decisions have played large parts in shaping the copper map of the world. American Smelting and Refining is now a tremendous property, greatest of all smelters and refiners of metals, whose net income in the record year 1929 mounted to $21,831,500.

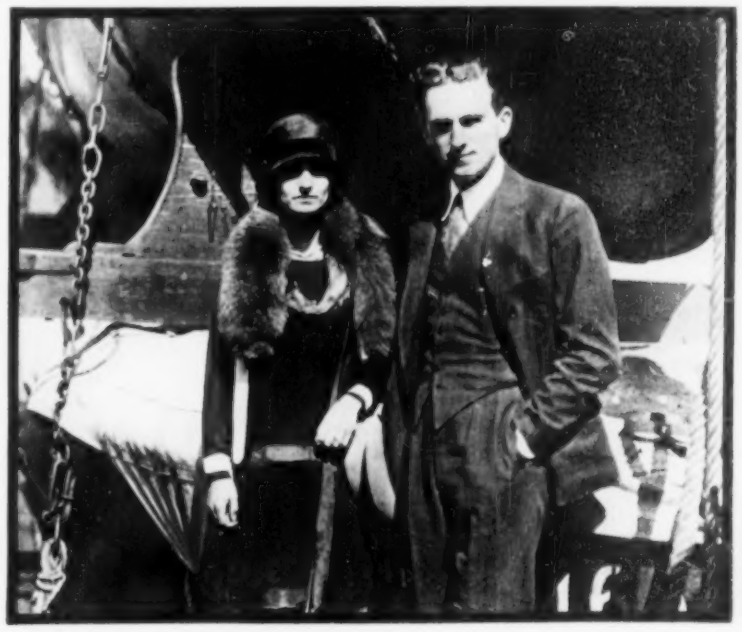
But American Smelting and Refining has not consumed all of their time and energy. For example, not far from the American smelters at Antofagasta, in Chile, are the famous old Chuquicamata copper fields where ore is low grade. As soon as feasible means of treating the Chuquicamata ores were found, the Chile Copper Company was formed, and Daniel, who had been largely responsible for the development, sent his son Harry F. to Chile as Man-on-the-Ground. First as observer and later as chief lieutenant, Harry watched Chile Copper absorb a $50,000,000 investment, then grow into a company with assets of $200,000,000, then sell out in 1923 to Anaconda.

No. 120 Broadway remained the Copper capital. For in the West had grown up, out of the first eager delvings into the earth, a group of highly successful copper mining companies. One was the Utah Copper Company, owning the mammoth mountain at Bingham [FORTUNE, April, 1930], yielding generous quantities of low-grade ore at each stroke of the pick. Another was Nevada Consolidated Copper, whose ore reserves are now calculated at 250,000,000 tons. In 1915 these companies, together with the Braden Copper Mines Co. (in Chile) and some mines in Alaska, began to converge into the Kennecott Copper Corporation, now the greatest of the world's copper companies. Here is the Morgan influence, for three Morgan partners meet with the Kennecott board. But the historic name in Kennecott is not Morgan, nor Daniel Cowan Jackling, but the name of Guggenheim.

Nor do the four brothers ponder only the problems of copper as they meet to direct their interests. One crucial meeting must have led them to invest in the second of Chile's two industries, an investment which ended with the production of 44 per cent of Chilean nitrates by companies Guggenheim-controlled. Another day saw the entrance of the Guggenheim Brothers into the $250,000,000 bankers' pool of last October. And yet another meeting, most recent of critical conferences, approved the new nitrate cartel by which Chile hopes to face and conquer the growing threat of synthetic nitrogen. This is now the major Guggenheim problem.

. . .

It would be a satisfaction to be able to draw each of these four Guggenheim brothers from the council room at 120 Broadway and give him a separate identity. Thus one might note that Simon, chief executive of the smelting company, is a suave, gentle man long used to meeting the world in public places. He alone has ventured into politics. He was nominated for lieutenant governor in Colorado before he was old enough under



Keystone
TWO DAUGHTERS OF SOLOMON MARRIED INTO THE ENGLISH ARISTOCRACY. LEFT, THE EARL AND COUNTESS OF CASTLESTEWART (ELEANOR MAY). RIGHT, THE J. R. LAWSON-JOHNSONS (BARBARA JOSEPHINE), NOW DIVORCED

Blank-Stoller
BENJAMIN, WHO DIED ON THE TITANIC

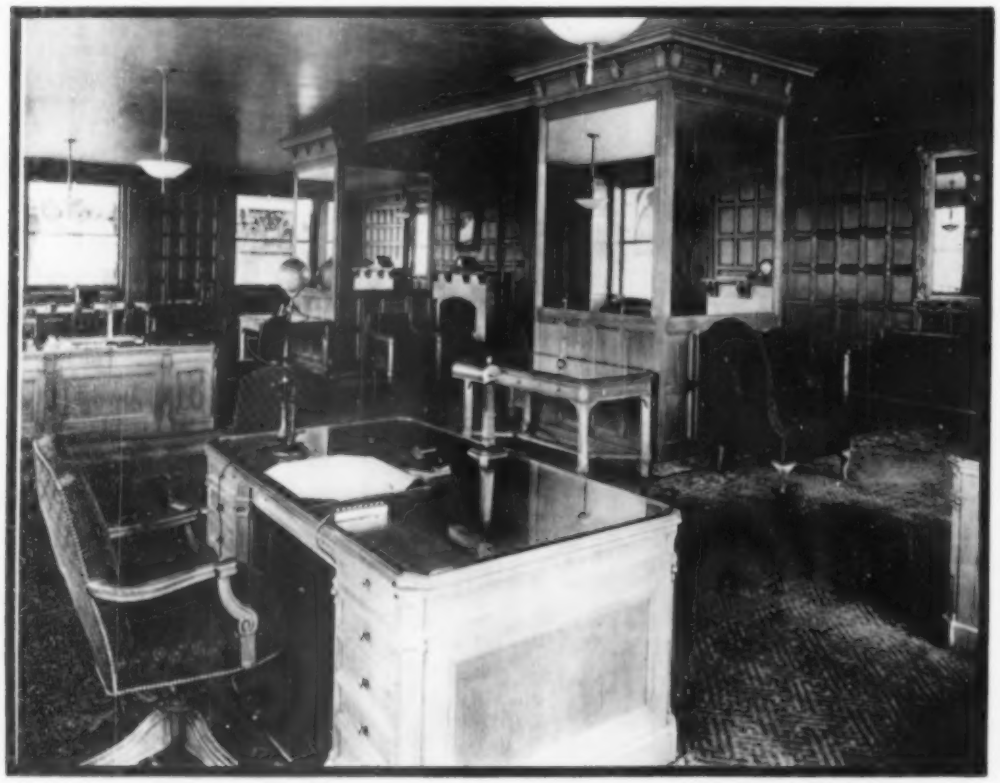
International
WILLIAM, ONLY NON-COPPER BROTHER

its constitutional requirement to accept the nomination and accordingly withdrew his name. Two years later he was nominated for the governorship and again withdrew. But when, in 1906, the Colorado Legislature elected him to the United States Senate, he withdrew from his business interests instead of from politics. At the end of one term, he declined to stand for reëlection and settled in New York City, succeeding his brother Daniel as president of American Smelting and Refining in 1919.

And, after Simon, one might summon Murry. What of Murry? The best financier of the four, some will say, and as an expert on copper prices, the peer of any living man. Then Solomon, the sportsman, who married a Rothschild, who was painted by Orpen, whose daughters married into the British nobility. Then Daniel, the oldest living Guggenheim, father of that Harry who went to Chile and who now is the U. S. Ambassador to Cuba. Speak of Daniel, and one thinks of the $3,800,000 Fund for the Promotion of Aëronautics which he founded in 1926 and of the Daniel and Florence Guggenheim Fund of $4,500,000 for the benefit of various charitable organizations.

But it would be unjust to single out Daniel for his benefactions. Rarely has a great family fortune been at once more prudently conserved and more wisely distributed. Notable as were the contributions of Daniel, they could not overshadow the earlier gift of Simon and his wife to create the John Simon Guggenheim Memorial Foundation. Through this gift ($3,000,000 in 1925; an additional $1,000,000 in 1929 to cover Pan-American and South American fellowships) hundreds of scientists, musicians, historians, writers, painters, and architects have been enabled to complete projects they could not handle unaided. Last year a third brother, Murry, established a third great foundation.

These are the large Guggenheim foundations, but the list of the brothers' benefactions is endless. A day nursery and a kindergarten owe their existence to Solomon. Benjamin, who went down in the *Titanic*, left some $115,000 to various charities; to the Metropolitan Museum, Isaac willed his paintings. Daniel and Murry together created the Fund which pays for the Sunday concerts by the Goldman Band in Manhattan's Central Park. All the brothers united to erect a building at the National Jewish Hospital for Consumptives in Denver, and, as a memorial to their mother, the annex to Mt. Sinai Hospital in New York.



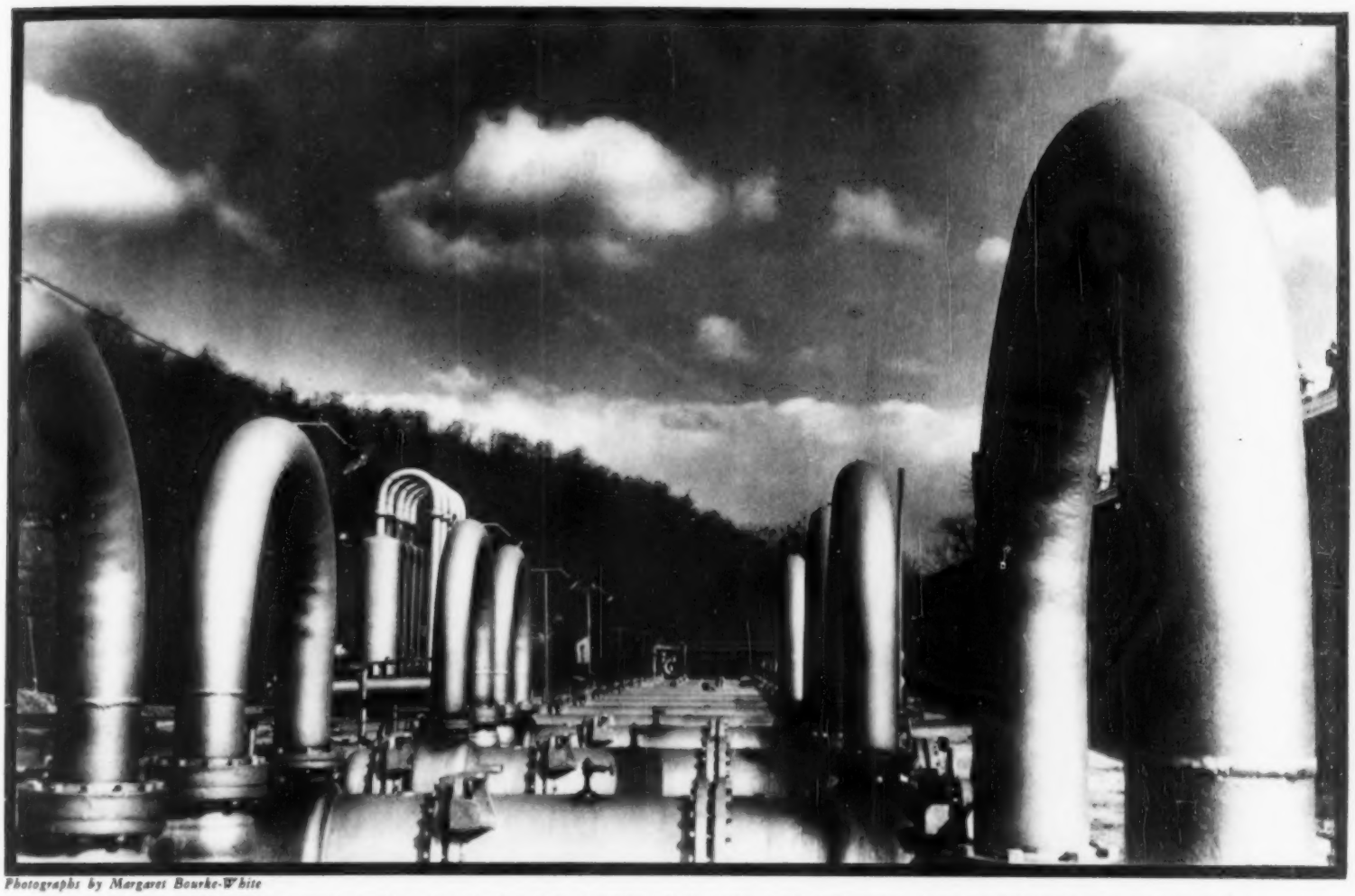
HERE THE SURVIVING ACTIVE FOUR MEET TWICE EACH WEEK

. . .

So, finally, the unity of this family defies division. More like the Rothschilds than any other contemporary dynasty of wealth, the Guggenheims have demonstrated the validity of copy book proverbs. They have worked early and late, have been decent and generous citizens, and have never forgotten what Meyer Rothschild said (and what Meyer Guggenheim deeply believed): "My sons, be as one." Like the Rothschilds, they have had their share of abuse (it was once said: "The smelter trust is one of the most oppressive known to the people of the West, and the Guggenheims are its head and front"), but like the Rothschilds, they have moved steadily forward in the estimation of their adopted people.

One difference must be noted. Meyer Amschel Rothschild bade his descendants intermarry, and they obeyed him implicitly. The sons of Meyer Guggenheim came to manhood in a time when society frowned upon intermarriage. It will remain for the third generation to demonstrate which policy serves better to preserve the vigor of the family, the integrity of the fortune. The brothers had many daughters, few sons. That Isaac's name be not lost, the son of his daughter Beulah is called Isaac Guggenheim II. Simon lost his eldest son, and another, George Denver Guggenheim, is now returning from the African jungles to work for the Guggenheim nitrate interests.

Daniel's son Harry, now the most active of the third generation, has no sons.



Photographs by Margaret Bourke-White

AT COMPRESSOR STATIONS, GAS LOSES ITS IMPURITIES AND BY-PRODUCTS AND RECOVERS ITS PRESSURE

Columbia and United

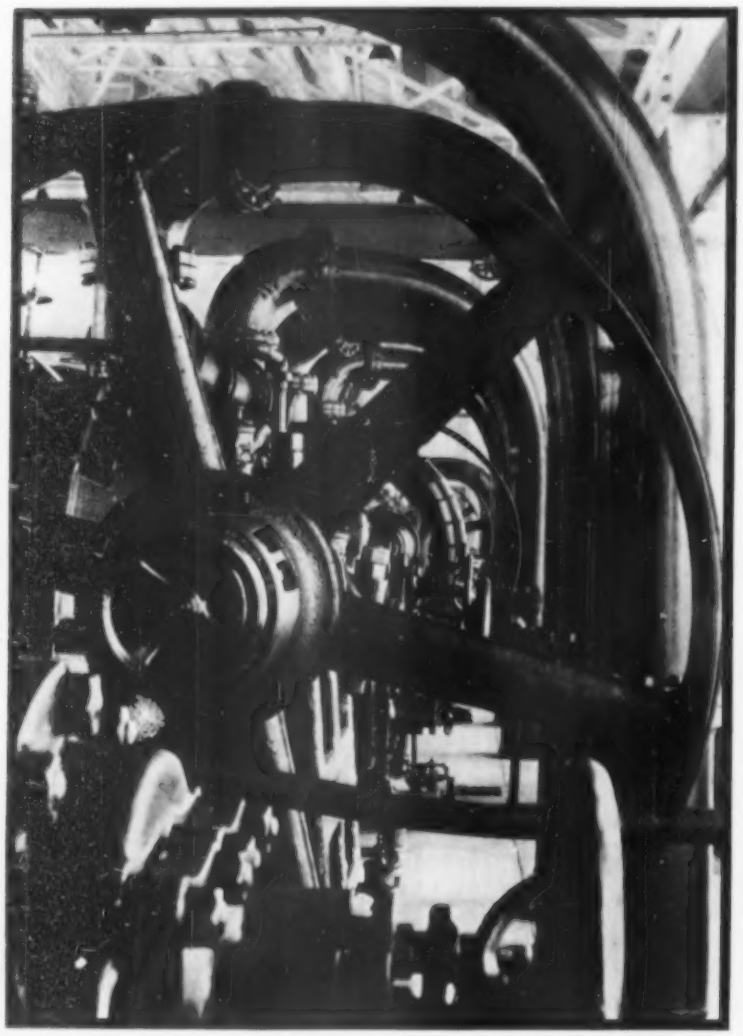
The Profits of Peace versus the Losses of War. Why Columbia Gas & Electric and United Corporation might have been industrial enemies. And how they became, instead, industrial friends.

WHEN, last month, the United Corporation, Bonbright and Morgan utility holding company, proposed to acquire a 25 per cent interest in Columbia Gas & Electric, operating utility serving a population of over 5,000,000 U. S. citizens, a further notable exception was taken to the already somewhat shopworn adage about competition being the life of trade. To the layman (as, for instance, a member of the U. S. Senate) there appears something mysterious and ominous about any rapprochement between large corporations and particularly large public utilities. For the outsider clings stubbornly to an industrial philosophy which the brighter industrial minds have long since abandoned. The major premise in this philosophy is that every corporation is the mortal enemy of its competitors, that it desires not only to become the greatest of its kind but also to exterminate its fellows and remain the sole survivor of a bloody and stricken field. Having realized this ambition, the victorious corporation then proceeds to tax the public with exorbitant prices.

Now this naïve, romantic, and terribly anti-social theory was actually held by 19th century captains of industry, and the senior Mr. Rockefeller, for example, did really make the dream come virtually true. But the management of big business today, and particularly of the utility business, is in the hands of men whose vision is not limited by the confines of any single corporation. The operating man of the first caliber is working with the coöperation of the banker, is looking at his industry with a financial as well as an operating eye. Where his actions are often misinterpreted as proceeding from considerations of power, they are actually as much motivated by considerations of profit. Nor is there anything less profitable than a war, particularly a war in which a complete victory is impossible. The utility man of today knows that there are too many lusty, well-

financed utility systems for any one to conquer the others. He knows that if the utility in which he is interested wars with its neighbor, neither will pay any dividends for a long time to come. Instead, therefore, of attempting to match turbine with turbine and kilowatt with kilowatt, he confers with his rival, smokes with him a long, black cigar of peace, and emerges with plans for a holding company in which both operating companies may amicably exist and mutually profit. To the financially-minded, industrial conflict is worse than a crime; it is a *cliché*.

Meanwhile, however, the suspicious observer, watching the banker's efforts at protecting his investment, decides that there is being formed a trust, a monopoly, and an octopus. As a matter of fact, and from a technical standpoint, the big utility holding company is a step away from, not toward, a monopoly. When Bonbright & Co.'s Landon Ketchum Thorne encouraged the formation of American Superpower, he arranged, in effect, for a community of interests between the major eastern utilities and in so doing guaranteed that no one would absorb its companions. It is not a disturbance of the *status quo* but the preservation of the *status quo* that prompts peace between potential antagonists too evenly matched for profitable warfare. Union without conquest; amalgamation without destruction; a peaceful penetration with the lion and the tiger lying down together—this is the newer philosophy of industry. From the standpoint of the public's relations with its utilities, it may not make much difference whether one corporation or a hundred associated corporate groups become superpowerful. Nevertheless those relations might at least be clarified if the party of the public part realized that not the Octopus but the Omnibus symbolizes the utility of today.



HERE GAS IS COMPRESSED TO 325 POUNDS PER SQUARE INCH BEFORE STARTING ON ITS JOURNEY THROUGH MILES OF TRANSMISSION PIPE

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Nor could a better example of hands across the dynamos be asked for than the acquisition of Columbia Gas & Electric stock by United Corporation and the election of Columbia's Philip G. Gossler to United's directorate. For the circumstances leading up to the United-Columbia stock transfer are circumstances which under the old competitive philosophy would have unquestionably resulted in warfare between the contracting parties, and the present amicable relationship is an excellent instance of contemporary utility tendencies. Columbia Gas & Electric Corporation is a conservative, long-established, ably-managed utility system which in 1929 sold about $70,000,000 worth of natural gas to over 1,000,000 consumers and about $27,000,000 worth of electricity to about 314,000 consumers. It sold more natural gas (144.6 billion cubic feet) than any other company in the United States, and although its electric business is profitable and progressing, natural gas remains its major product. Columbia is an outgrowth of a local gas company which in 1894 began to supply Charleston, West Virginia, with natural gas from near-by gas fields. Expanding north and west, acquiring a franchise here, a utility there, the Columbia system in 1926 met and merged with the Ohio Fuel Company, which had begun in the Pennsylvania fields and snowballed south and west from the district around Pittsburgh. In the merger the Columbia name was retained, and Columbia's Mr. Gossler remained operating head of the combined systems; but Ohio's George Crawford became chairman of the present corporation. There are three Crawfords, Brothers George and Fred and Cousin Harry, alike in their reluctance toward personal publicity, a reluctance which, coupled with the fact that no individual owns more than 2 per cent of Columbia stock, veils the company's ownership in corporate obscurity. The presence of Clarence M. Brown, of the Pittsburgh Plate Glass Company, and of Henry C. McEldowney, of Pittsburgh's Union Trust Co., on the directorate indicates that the omnipresent Mellons are not entirely absent; nor is there any secrecy about Director Harold Stanley's membership in J. P. Morgan & Co. In any event, it is obvious that Columbia is not likely to suffer from any scarcity of financial backing.

And Columbia is equally fortunate in its operating efficiency and earning capacity. Unlike many large utilities with relatively far-flung and isolated centers connected chiefly by a common control, Columbia has put together a compact and coherent network whose 11,000 miles of transmission piping are as consecutive and as coördinated as the lines of a railroad system. Since purchasing (in 1928) the Ohio gas properties of Cities Service, Columbia has had hardly an Ohio competitor, except that Standard of New Jersey's East Ohio Gas Co. now and presumably forever supplies the gas needs of Cleveland, Youngstown, and Akron. Divided into six main systems—centering respectively at Cincinnati, Ohio, Columbus, Ohio, Dayton, Ohio, Pittsburgh, Pennsylvania, Charleston, West Virginia, and Binghamton, New York—Columbia is located in thickly populated districts, in which every long-distance pipe line may reach out with profitable branches. The company is also blessed with the most ample reserves of wells and acreages; operated during 1929, for instance, only 14 per cent of the proved acreage under its control. As for profit, the 1929 consolidated statement showed a net income of $32,161,139.

Yet these facts and figures, vital as they are, represent nothing new or unexpected and would not in themselves account for United Corporation's interest in Columbia. The dynamic factor in the Columbia equation is the recent and current development of the natural gas industry, the division of the gas industry between the natural and the manufactured product, and the presence, among United's assets, of large holdings in three of the great eastern distributors of manufactured gas. Even the briefest consideration of these three factors is sufficient to demonstrate that United's eagerness to add a block of Columbia stock to its portfolio represents much more than a desire to make an obviously excellent investment.

Natural gas, as everyone knows, comes out of wells, frequently out of the same wells that produce the petroleum which natural gas chemically so much resembles. It has twice the heating value of manufactured gas, is easily the cheapest of fuels, and comes very close to justifying its enthusiasts' description as the ideal heating agent. But,

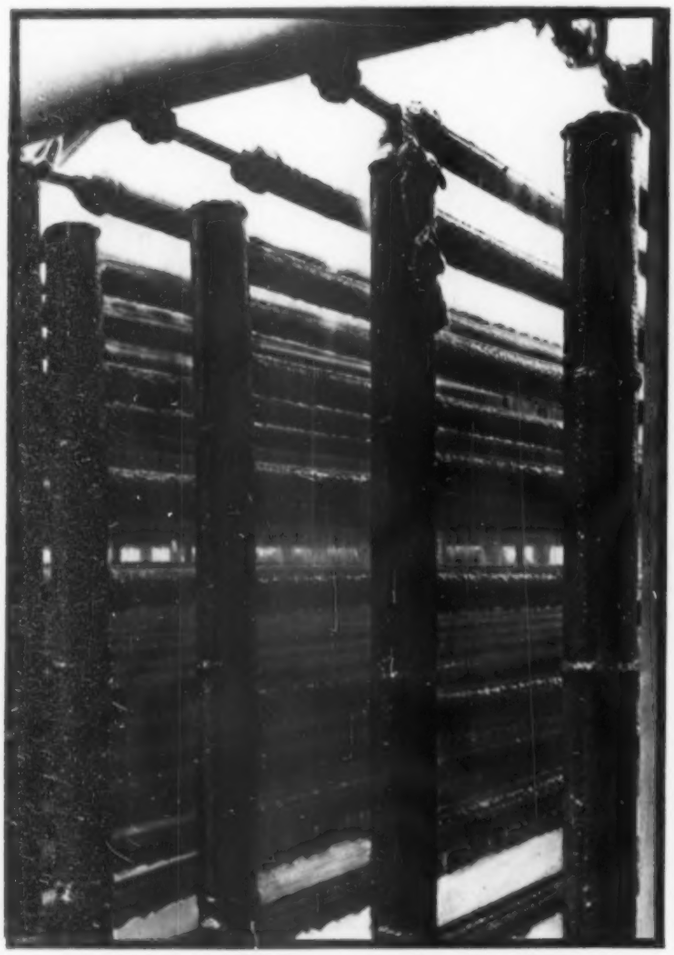
LIKE ROMAN AQUEDUCTS, THE ARCHED PIPES STAND OUT AGAINST THE SKY

unfortunately, gas wells are not ordinarily located in the vicinity of the great centers of population. Such cities as New York, Philadelphia, Washington, Baltimore, and Boston, for example, are manufactured gas cities, supplied by a utility company which makes city gas within the city limits and thus avoids a transportation problem. Until the last few years, therefore, it was said that the potential development of natural gas suffered from an equally natural (i.e., geographical) limitation.

Today, however, the natural gas industry is in the process of overcoming the handicap of distance by the construction of long-distance pipe lines. Improvements in pipe line engineering (especially the welded pipe line energetically sponsored by Henry L. Doherty's Cities Service) have resulted in the 540-mile line between Monroe, Louisiana, and St. Louis, and pipe has already been ordered for a 950-mile line from Amarillo, Texas, to Chicago. Pipe lines of such extent obviously leave no section of the country remote from the advantages of natural gas and equally obviously permit the formation of supergas companies, just as the long-distance transmission of electricity permits the formation of superpower companies. And the most logical direction of natural gas expansion is not so much from the southern gas fields north as from the mid-western gas fields east. Along the Atlantic seaboard lies a great industrial and domestic market, a market which Columbia, of all natural gas companies, is most able to reach. Already one Columbia pipe line terminates in the suburbs of Philadelphia and another in the suburbs of Jersey City. A third line, now under survey, will run from Columbia's Charleston fields through White Sulphur Springs and down the Shenandoah Valley to the eastern seaboard. Here, evidently, is a most tangible evidence of the natural gas eastern invasion, an invasion summed up in the popular impression that New York will have natural gas by 1932 and that Columbia Gas & Electric will supply it. Nor is there the slightest engineering question but that Columbia could deliver natural gas along the Atlantic coast at a price that would give the established companies the keenest competition. Certainly the situation provides the setting for an industrial conflict of the first order.

And just as such a sectional warfare would find Columbia leading the attack, so also would it find United Corporation directing the defence. United has attracted the most publicity through its holdings in Niagara Hudson, the up-state New York utility which New York's Governor Franklin Roosevelt so watchfully eyes. But United has also an interest (959,921 shares) in Public Service of New Jersey; an interest (6,081,846 shares) in United Gas Improvement; and an interest (202,900 shares) in Consolidated Gas of New York. Public Service of New Jersey supplies some 750,000 consumers with manufactured gas; United Gas Improvement supplies 456,000 Philadelphians and 226,000 additional eastern Pennsylvanians with manufactured gas; and Consolidated Gas supplies some 1,100,000 New Yorkers with manufactured gas. Backed by a combination of Morgan and Bonbright interests, and with American Superpower its largest shareholder, United Corporation would be an extremely formidable antagonist in a natural versus manufactured gas conflict.

But (judging from all present indications) there will be no battle, and if natural gas does come to New York (as it very well may), it will be delivered perhaps by Columbia



UNCOOLED GAS WOULD REACH TEMPERATURE OF 1000 DEGREES FAHRENHEIT

GAS PUMPED THROUGH OIL LOSES SAND, WATER, SILT

IMPACT

ACCORDING TO WEBSTER: The single instantaneous striking of a body in motion against another body.

ACCORDING TO YOUNG & RUBICAM: That quality in an advertisement which strikes suddenly against the reader's indifference and enlivens his mind to receive a sales message.

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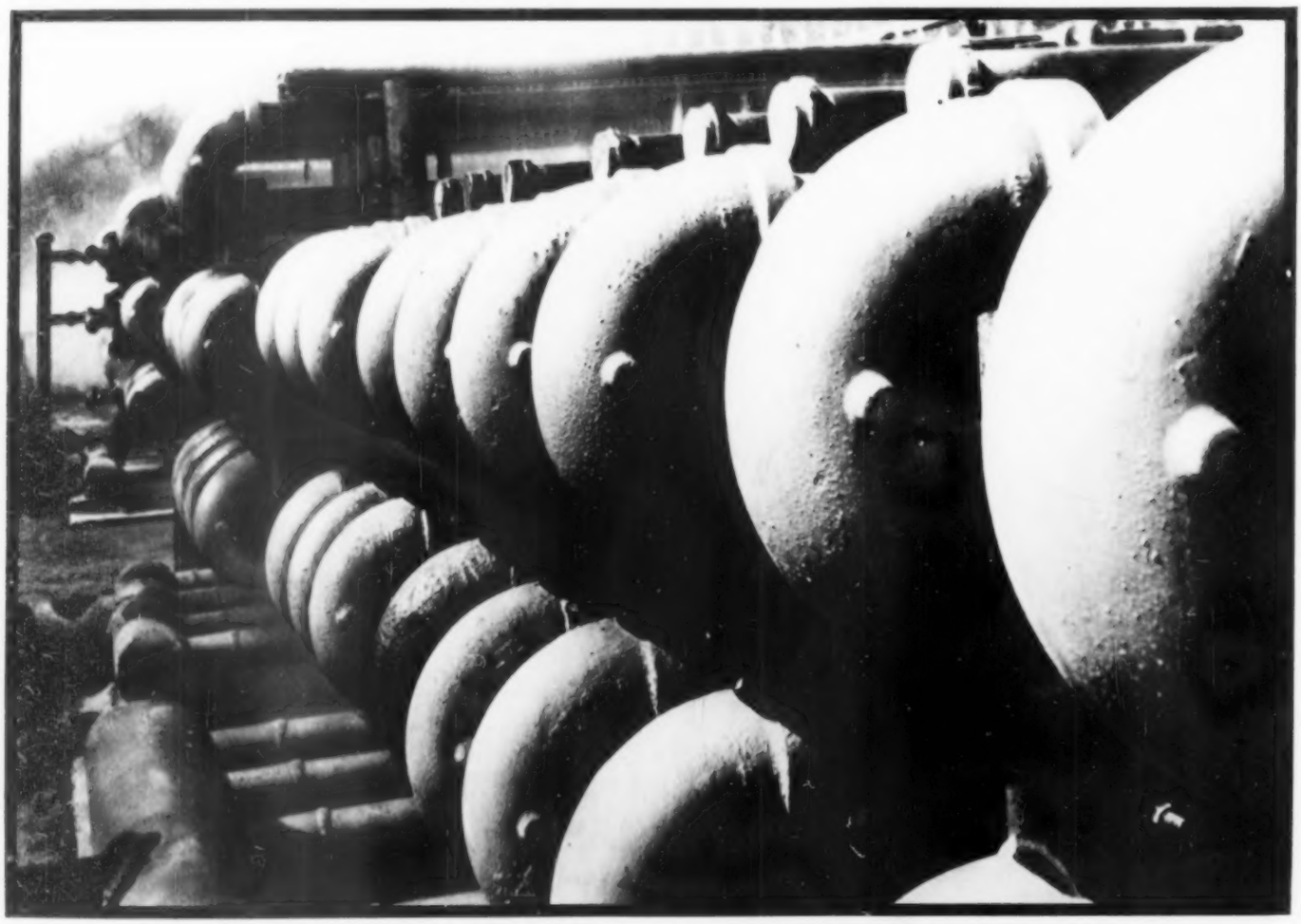
but sold certainly by Consolidated, with the consumer probably burning a mixture the exact proportions of which he will neither know nor likely care. Few utility interests are so opposed as to be irreconcilable. Both President Gossler of Columbia and President George Howard of United well knew that the most economical moment for a peace treaty is before hostilities have developed; and how awkward, indeed, would have been the position of Morgan-Partner Stanley of Columbia and Morgan-Partner George Whitney of United if the two corporations had not adjusted their difficulties. So United offered to acquire (on a stock exchange basis) 25 per cent of Columbia stock, and Columbia directors wrote to their stockholders, advising them that the exchange appeared equitable and advisable, and all such stockholders were given the privilege (until June 10, 1930) of sending Columbia common certificates to Messrs. J. P. Morgan & Co., 23 Wall Street, New York, or Messrs. Drexel & Co., Fifteenth and Walnut Streets, Philadelphia, or the Union Trust Company of Pittsburgh, P. O. Box 755, Pittsburgh, Pennsylvania, and receiving for each such certificate one-third of a share of United Corporation $3.00 preference stock plus one and one-half shares of United common. Thus Columbia may expand to its uttermost with every cubic foot of natural gas sold, profiting the holders of United Corporation securities while, on the other hand, Columbia stockholders acquire an interest in every manufactured gas meter operating in United's eastern affiliates. Thus natural gas finds its new market while manufactured gas keeps its old customers, and a potential disturbance is averted with no interruption of dividends.

The natural gas industry is today rapidly expanding, rapidly combining, rapidly extending its pipe lines to new cities and new markets. There is every likelihood that it will eventually extend into every portion of the country and take over a constantly increasing portion of both the industrial and domestic load. Whether its competitive relations with manufactured gas will invariably be neatly and swiftly adjusted is, of course, unpredictable. It should be realized that manufactured gas has still many more customers than natural gas, that it is the larger branch of the industry from the standpoint of capital invested, and that its production is also rapidly increasing. That the domestic use of natural gas will increase as more and more cities come within the range of the natural gas pipe lines is, however, sufficiently obvious. It seems altogether likely that the long-established manufactured gas companies in the larger manufactured gas cities will in most cases continue to act as the distributing agents of gas natural or gas manufactured and in so doing will be not in opposition but in coöperation with the natural gas producers. It is also likely that the progress of natural gas will be accompanied by many such arrangements as that which Columbia and United have just concluded. Opponents of utilities will argue that such affiliations are inimical to the public good, that the consumer would benefit from a downright struggle between the gases. To debate this proposition would be easy, but not very relevant. For there is little possibility of the utility leader provoking or even permitting a Donnybrook Fair to develop within his industry. There is not much likelihood of fratricide between the Manufactured Cain and the Natural Abel—not, at least, as long as each can so pleasantly and profitably contrive to become his brother's bookkeeper.



CHIEF BY-PRODUCT IS GASOLINE, OF WHICH 2,208,000 GALLONS WERE LAST YEAR RECOVERED

ÆTNA is the first multiple line insurance organization in America to pay its policyholders

One Billion Dollars

One billion dollars paid to Ætna policyholders of the Ætna Life and Affiliated Companies in eighty years. Think what that means!

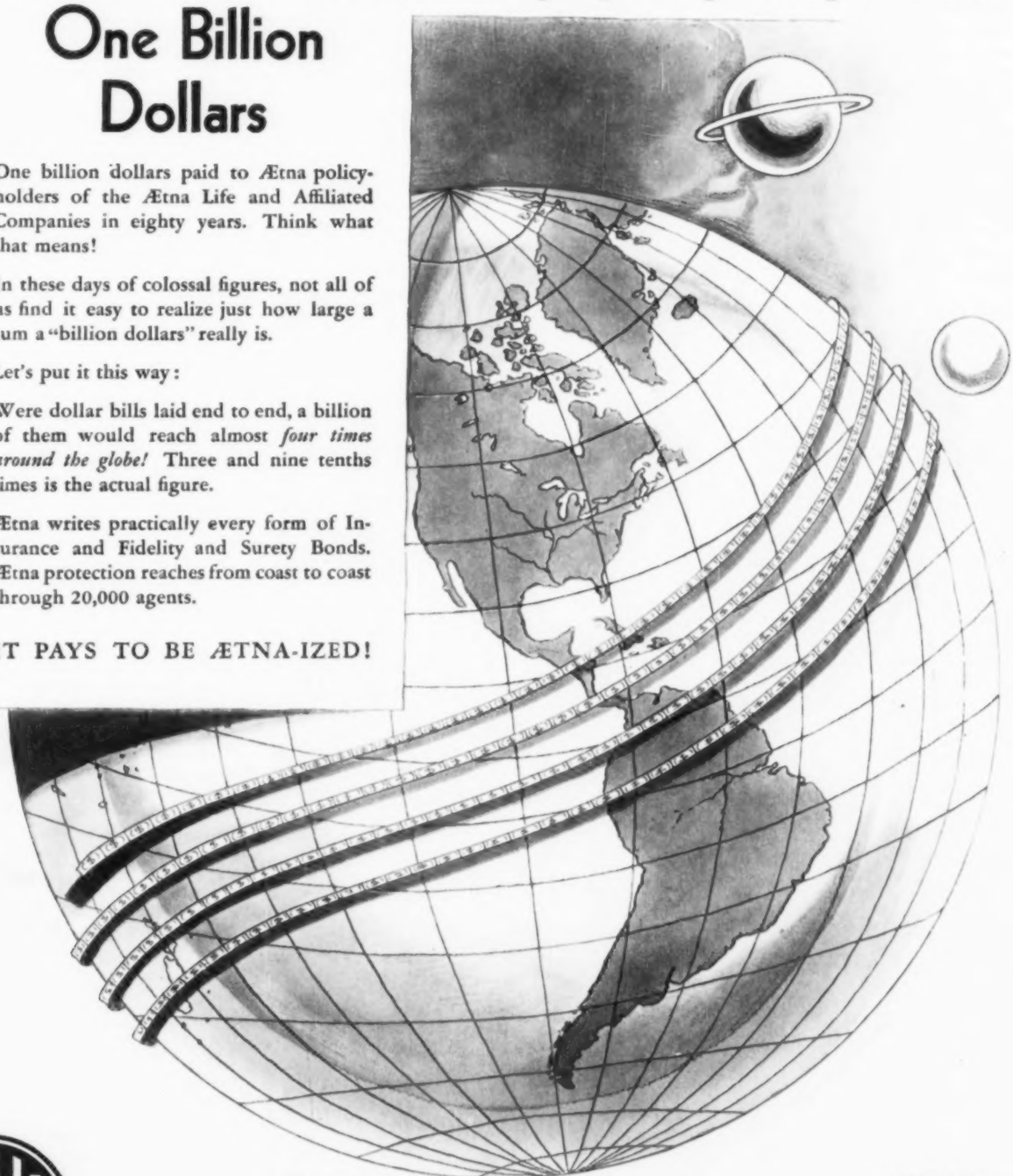
In these days of colossal figures, not all of us find it easy to realize just how large a sum a "billion dollars" really is.

Let's put it this way:

Were dollar bills laid end to end, a billion of them would reach almost *four times around the globe!* Three and nine tenths times is the actual figure.

Ætna writes practically every form of Insurance and Fidelity and Surety Bonds. Ætna protection reaches from coast to coast through 20,000 agents.

IT PAYS TO BE ÆTNA-IZED!



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Ætna Life Insurance Company
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Automobile Insurance Company
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of Hartford, Connecticut

1850
1930

American Car and Foundry Company—[*Continued*]

tools. Even railroaders, whose living comes from freight, despise the freight car. It is that saddest of all things, a thing doomed to continued existence, albeit it has no future. It is sometimes said that the worst use to which a railroad could put $1,000,000 is to buy a $1,000,000 worth of freight cars. For the object of every competent railroader is precisely to avoid such a purchase. He spends $1,000,000 on a new signal system or on new locomotives in order that cars move faster. Which means that fewer cars do the same work, which in turn means that he will not need to spend $1,000,000 on new freight cars. Operating progress comes from subtraction rather than from addition or multiplication of freight cars. Whereas $1,000,000 worth of superpower locomotives means that freight will move more cheaply and speedily than before, $1,000,000 worth of new freight cars does not cut a minute from operating schedules.

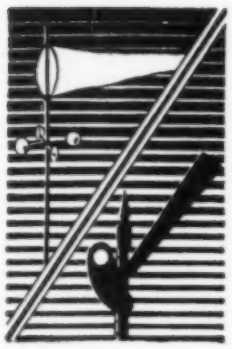
In short, the object of a railroad is to move. Locomotives move. Signals move. Better roadbeds move. Intelligence moves. Freight cars don't move; they just get moved, the dumb things.

The stolid passivity of the freight car is reflected in its manufacture. A. C. F., as we shall see, is now making a pleasure boat. A very natty thing it is, with personality plus, not to be confused with any other pleasure craft. You just know it's an A. C. F. But there's no such thing as an A. C. F. freight car, except for specialized use such as tank cars. If you were sitting with Mr. Woodin on *The Chief* as it clattered into Chicago over labyrinths of tracks, he could not say: "Look, there's our crack 1930 Super-fat Model." That is not because all freight cars are alike. Far from it. Even the common box car, most rudimentary form of car life, presents surprising diversity in manufacture. But the diversities did not spring from the imagination of A. C. F. For A. C. F. and the other builders are essentially custom tailors to the railroads, making up each order according to the specifications of the particular customer. This is not to say, of course, that A. C. F. does nothing to improve its product. On the contrary. It maintains an engineering staff, and a very able one. But each railroad also has its own car-designing staff, which means that each railroad has its own ideas about the kind of box car it wants. Like a good tailor, A. C. F. does not argue with its customers. It builds the cars strictly according to the particular railroad's specifications though this often means setting up the plant all over again in a different way for the next order. To the layman this appears an uneconomical way to build box cars, but it has persisted for nearly a century and shows no sign of changing. One thing keeps freight cars from running wild in design—the standard code of the Master Car Builders Association.

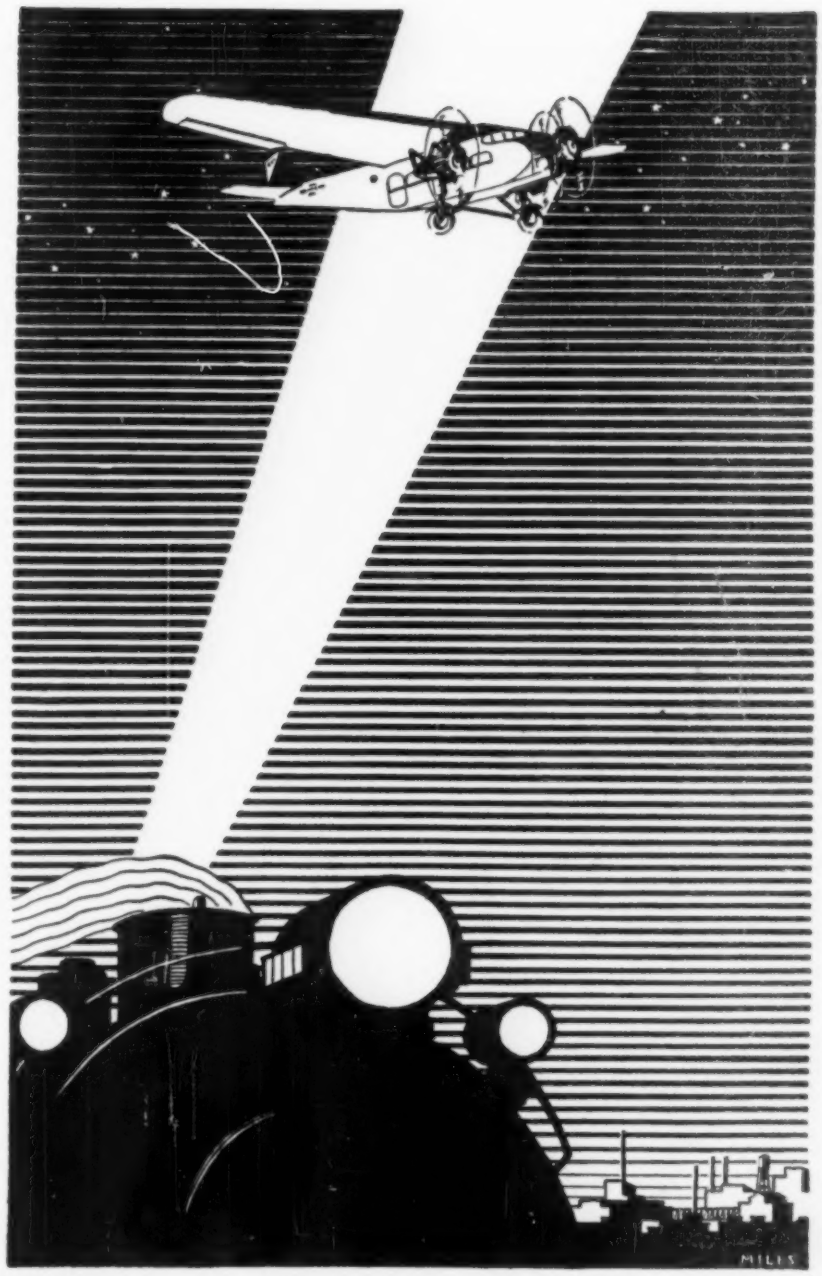
TO MANHATTAN'S GRAND CENTRAL STATION COME MANY PULLMANS, NO FREIGHT CARS

But before examining in detail the varieties of the freight car, let us look at its most prolific spawner, A. C. F. And we shall see that it is not the haggard and harried mother that might be supposed. Indeed, it is very rich, well-heeled, and big with promise. True, its net income has declined as aforementioned. But its dividends are handsomely maintained out of a $10,800,000 dividend reserve set up as the result of the enormous profits it derived during the War, when, in one year, it was required to make 31,000 cars. This reserve has now been depleted to $5,300,000. But the show is not over when that reserve is finished. A. C. F. will continue for many years to build thousands of cars. The possibility of railroads building all or most of their cars is still remote, partly because they cannot build them in busy times when they may want them most.

But the great new factor in A. C. F. is Diversification. Consider one potent fact: A. C. F. makes one-third of all the carburetors in the country. These are turned out by the Carter Carburetor Company of St. Louis, one of A. C. F.'s most profitable subsidiaries. They are sold to General Motors, Chrysler, and many another motor-car maker. Not a few are absorbed by another flourishing side line: trucks and buses. Brill, Hall-Scott, and Fageol, potent names in the bus and truck



Behind the man . . . at the throttle



A DAZZLING white beam pierces the black of night . . . a subdued rumbling rises suddenly to roaring crescendo, then fades again as quickly. A train disappears into the darkness beyond.

Modern transportation presents a picture even more romantic than those of ox-cart and stage-coach days . . . a picture created on a canvas of vast facilities and resources . . . a picture imposed on a background so intricate that only close scrutiny can reveal the countless elements of which it is composed.

Behind the man at the throttle . . . serving the thundering iron horses of man's invention are giant service stations along industry's right of way . . . created by skilled organizations . . . one of them The Austin Company, international engineers and builders . . . working hand in hand with railroad engineering staffs . . . designing, constructing and equipping terminals, locomotive repair shops, roundhouses . . .

Close cooperation with those directly responsible for railroad building programs . . . long experience and extraordinary facilities that assure speedy completion of any project undertaken . . . suggestions often offered on how important savings can be made in design and construction . . . *These are probably the outstanding reasons why The Austin Company has often been employed by many of the great transportation companies.*

To those whose plans for the future demand the highest type of design and construction . . . whether it be to better provide for transportation, distribution or production . . . Austin offers a complete building service, perfected by years of experience, tested by the leaders of industry.

THE AUSTIN COMPANY

The AUSTIN METHOD *of Undivided Responsibility*

Design, construction and building equipment . . . separate responsibilities ordinarily . . . become one unified responsibility under The Austin Method. One nation-wide organization handles the complete project under one contract which specifically guarantees in advance, total cost, time of completion with bonus and penalty clause if desired; and high quality of materials and workmanship.

THE AUSTIN METHOD

ENGINEERS AND BUILDERS . . . . CLEVELAND

field, are all three now merged into the initials A. C. F., and in this vigorous industry the company now occupies a position in the very top rank, close beside the industry's leader. Justifiably, A. C. F. boasts that its buses are exceedingly well-built; two of them have run 150,000 miles each in Yosemite Park without overhauling. A. C. F. takes equal pride in the handsome express cruisers which slip into the water from its plant at Wilmington, Delaware. That A. C. F. earnings for 1929 are up considerably may be traced justly to the fact that 1929 was a boom year for the car-builders. But Diversification can also claim a big share of the earnings increase.

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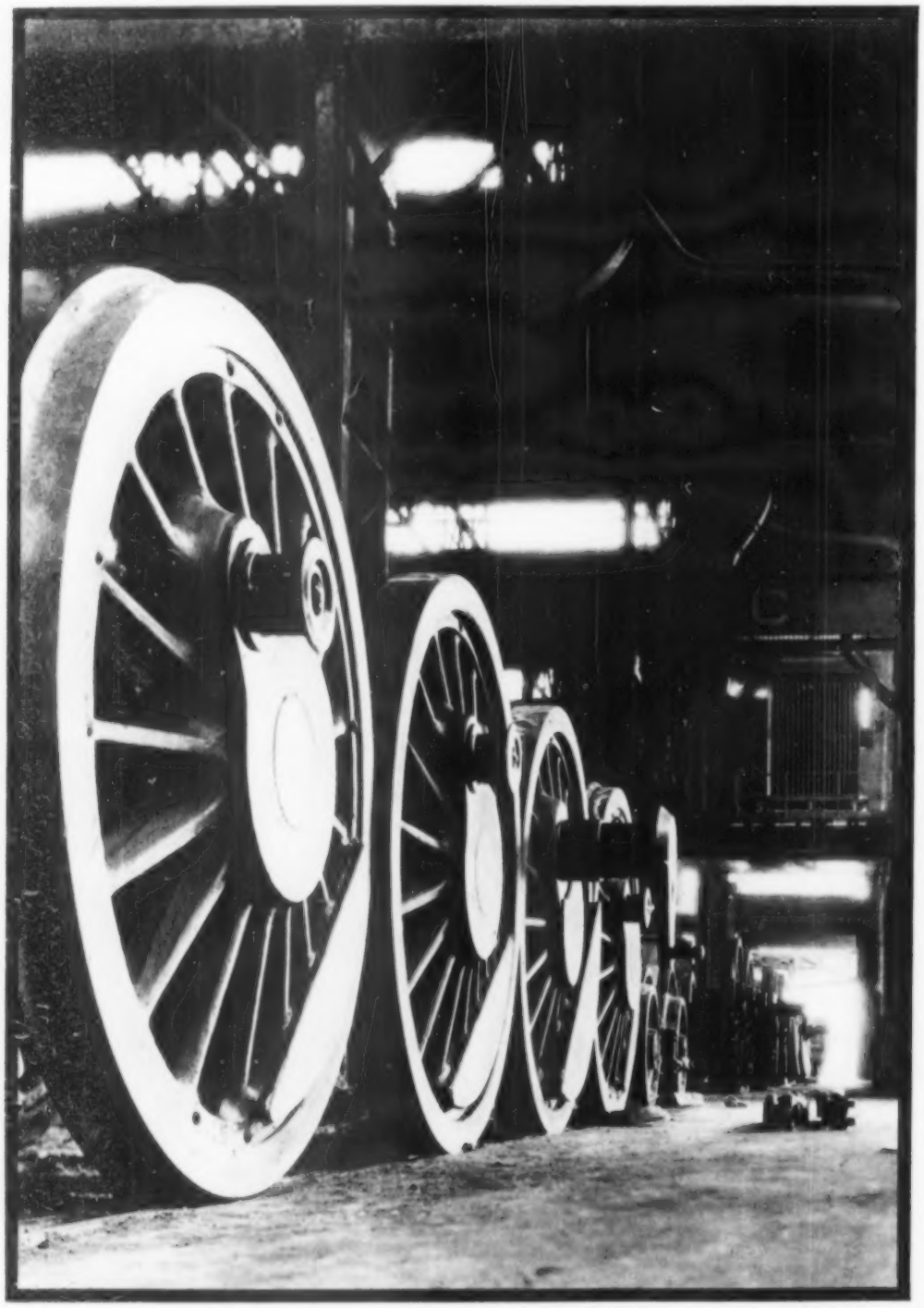
It can be said, without exaggeration, that A. C. F. is the largest and most powerful maker of railroad equipment in the world. Sixteen plants, some of them huge, none of them exactly small, are scattered up and down the land east of the Mississippi from Buffalo to Memphis, from Wilmington to St. Louis. If one wanted a point from which to survey in his mind's eye the great, gangling body of industry spread over half the country that is A. C. F., he could choose no better vantage point than a certain high plateau on the banks of the Susquehanna River. On this plateau, about twenty-five miles downstream from Wilkes-Barre, is the little town of Berwick, Pennsylvania. Berwick is a pleasant place. Its streets are wide and tree-shaded. Its houses, modest little boxes with porches in front, have plenty of grass and shrubbery around them. On the outskirts of town are 145 acres inclosed by a high wire fence, and within this fence is the largest of the fourteen A. C. F. freight car plants. It can turn out, among other things, fifty freight cars a day. A freight car plant is little more than an aggregation of smaller plants. An automobile workman would be at home in the assembly line at Berwick, an iron-puddler could practice his craft in the foundry, a carpenter could build floors and walls all day in the wooden car department, and a steel worker would find nothing new in the rolling mill. Nor would a house painter need to change his technique much in painting the cars, though he might be surprised at the nineteen coats of paint and five coats of varnish some passenger coaches receive. All the workmen at Berwick wear safety glasses, which gives them a curiously scholarly appearance. The plant's safety record is notable: there has not been a fatal accident since 1923. Some fifteen miles of railroad track tie together the various shops and connect them with the Lackawanna at one end of the plant and with the Pennsylvania at the other.



A SET OF DRIVING WHEELS BEFORE THEY ROLL OUT OF EDDYSTONE UNDER A LOCOMOTIVE

High on a hill overlooking the plant at Berwick are the homes of Clemuel Ricketts Woodin and of his son, William Hartmann Woodin, president American Car and Foundry as well as chairman of American Locomotive. The Woodins are, and have long been, the leading citizens of Berwick. In the plant which his home overlooks, President Woodin got his first job, at nineteen cents a day. In those days the plant was known as Jackson & Woodin, and C. R. Woodin was a partner as his father had been before him. There young Woodin cast his first perfect wheel in the wheel foundry, for which his father gave him a prize of $500. Casting perfect wheels did not appeal to the young Woodin as strongly as more cultural activities. Therefore he went off to Europe where he studied music in Germany and became a special correspondent in the Near East for the London *Times* and the New York *Herald*. When he came back to Berwick, however, he settled down to running the family plant, which was one of the companies that united in 1899 to form A. C. F. In 1916 he became president of the company.

Those who persist in believing that business and esthetic talents are mutually exclusive must be puzzled by Mr. Woodin. On the one hand they see him running two vast industrial enterprises and sitting on the boards of a dozen others. And on the other, they see him composing music (eight of his orchestral compositions were played at a private theatre party last February) and going deeply enough into numismatics to write a learned tome on *The United States Pattern: Trial and Experimental Features.*

If your business requires South American banking facilities you will do well to consult THE FIRST NATIONAL BANK *of* BOSTON *whose Buenos Aires Branch is the largest North American branch bank below the equator.*

The FIRST NATIONAL BANK *of* BOSTON

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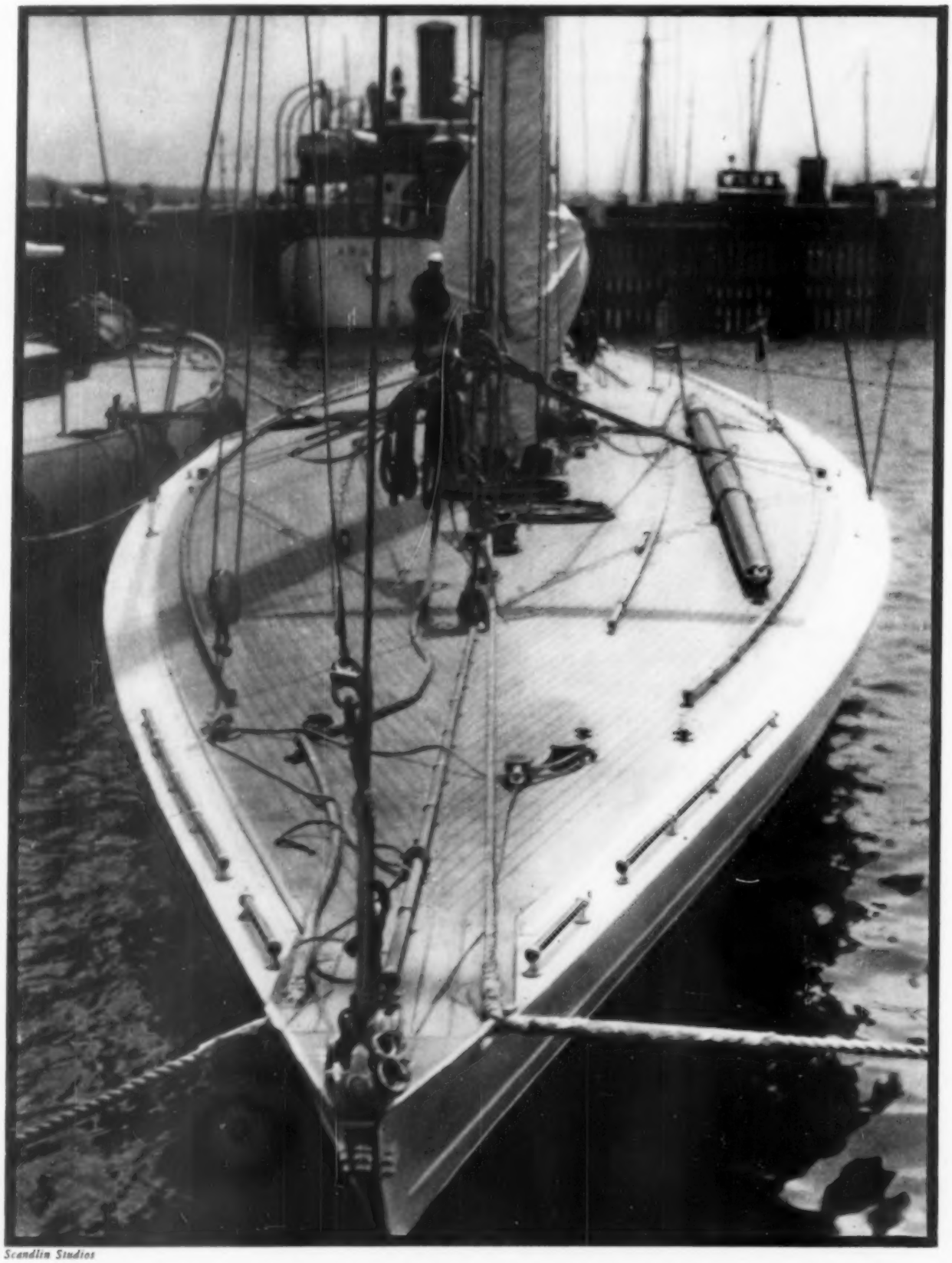


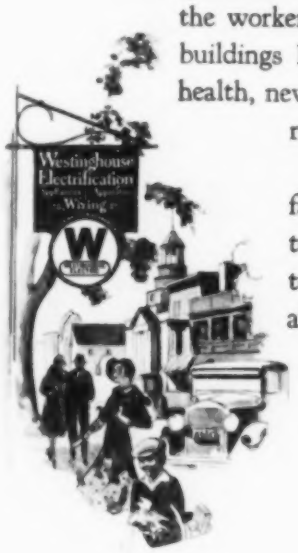
Scandlin Studios

ENTERPRISE LIES AT JACOB'S PIER, CITY ISLAND, READY TO COMPETE FOR THE DISTINCTION OF DEFENDING THE AMERICA'S CUP

More Light ... More Air ... More Convenience

Electricity's Building Code

THE building that made eyes brighten in admiration less than two score years ago wouldn't pass muster at all today. The unwritten code of improvements put into building practice by electricity gives those who dwell in the modern home, apartment, or hotel, comforts and conveniences unknown in the last generation. Thanks to electricity, the worker in office or industrial buildings has new safeguards to health, new ways to save time and reduce the strain of toil.



Electric motors drive fans and suction ventilators circulating fresh air to every corner. Electrically operated office appliances speed the writing of business records. Water gushes from faucets fifty stories above the street because electric-driven pumps put it there. On dark nights and sullen days the flick of a switch floods rooms with cheerful light. Because of electric automatic control developed by Westinghouse, modern elevators whisk you from floor to floor with new smoothness and comfort.

To owners or tenants, in buildings of every size or type today, Westinghouse engineering and Westinghouse electrical equipment help to provide more comfort and satisfaction for the purchase price or the rental fee. Westinghouse service is complete.

Tune in the Westinghouse Salute over WJZ and the coast-to-coast network, every Tuesday evening

Westinghouse

Electric Light & Power: 1920-1930

Of 438 papers, written in 1925, reviewing the decade's first half and forecasting the second half, the most brilliant effort, winning a $10,000 prize, is here presented.

In 1925, Bonbright & Company, Incorporated, offered and awarded prizes totaling $10,000 for the best contemporary reviews and forecasts of the electric light and power industry, to be written in the form of articles summarizing the progress in the decade 1920-1930 and dated as of January 1, 1930. The board of directors of The American Superpower Corporation judged the competition.

Simultaneously, the board voted to supplement the $10,000 Bonbright prizes with another prize of $10,000 to be awarded to that contestant whose prophecies, reviewed again in 1930, should have come nearest to the facts. At the N. E. L. A. convention in San Francisco, this June, award was made to the paper submitted by Mr. Reuben B. Sleight. As engineer for the Minnesota Tax Commission, Mr. Sleight had prepared a paper which won a fourth prize ($250) in the Bonbright competition of 1925. Later he went to Washington as an aide to Secretary Hoover in the Department of Commerce. He was killed in an accident several years ago. His estate will receive the prize money.

"His paper," the board declared, "is worthy of an enthusiastic tribute . . . The author ventured a considerable number of statistical forecasts that now exhibit remarkably small deviations from the actual data . . . Other papers contained isolated studies of brilliant prophecy . . . Mr. Sleight excelled in general treatment . . ."

On another page of this issue (in Fortune Supplement) FORTUNE prints a highly important series of figures made public by the board of The American Superpower Corporation at the N. E. L. A. convention. As Mr. Sleight's paper reviewed 1920-25 and forecast 1925-30, so the board secured from companies representing, in kilowatt-hours sold, about 30 per cent of the entire electric light and power industry reviews of the 1925-30 period and estimates of their performances over the next three years.

FORTUNE here presents Mr. Sleight's essay:

WHAT unit of measurement shall be applied to the 1920-30 electric light and power development? Kilowatt hours, miles of line, dollars, number of employees, homes lighted—is any one of them alone suitable? Or can we get a proper conception from a consideration of individual happiness, standard of living, national well-being, and America's security? Perhaps a combination of the tangible and intangible will be best. The decade presents a series of records for all of those things that can be reduced to statistics—plants built, use of power, financial operations, the entire extension of the electric utility. Percentages obtained from our population increase of 14,000,000 must be multiplied by from ten to fifteen to equal the changes in the power and light industry.

The vast number of persons enjoying its benefits indicates the far reaching influence of electricity upon our lives. Some 75,000,000 live in electrically equipped homes; 7,000,000 to 8,000,000 engage in occupations dependent upon central stations for source of power; perhaps 4,000,000 are owners of stocks and bonds of electric light and power companies. These figures are several hundred per cent above those of 1920.

Electricity, a servant doing the work of tens of millions of men, extracting our raw materials, operating our factories, facilitating our transportation and communication, making our highways safer, our homes more comfortable, and our country more prosperous and secure, can be the subject for volumes. Its development has had its acts of heroism, its romances, and its sacrifices. These will continue. But the vision, the imagination, and the every-day toil of the engineers, the financiers, the administrators, together with efficient organizations and a growing understanding by the public, have brought the electric power and light industry to its high position of today and furnished us with power at a lower cost than ever before. The 1920-30 accomplishments of these individuals and organizations are the ones that are to be reviewed here. The romances must be left to the poet and novelist.

The discussion of the decade's development has been divided into sections. The order of their presentation is not meant to emphasize the importance of any group of activities. Each is essential to the success of the others.

Engineering

A catalogue only of electric light and power engineering accomplishments of the past decade or any other of the last five would fill many pages. But few things can be mentioned. They will be discussed under five headings.

The steam central station

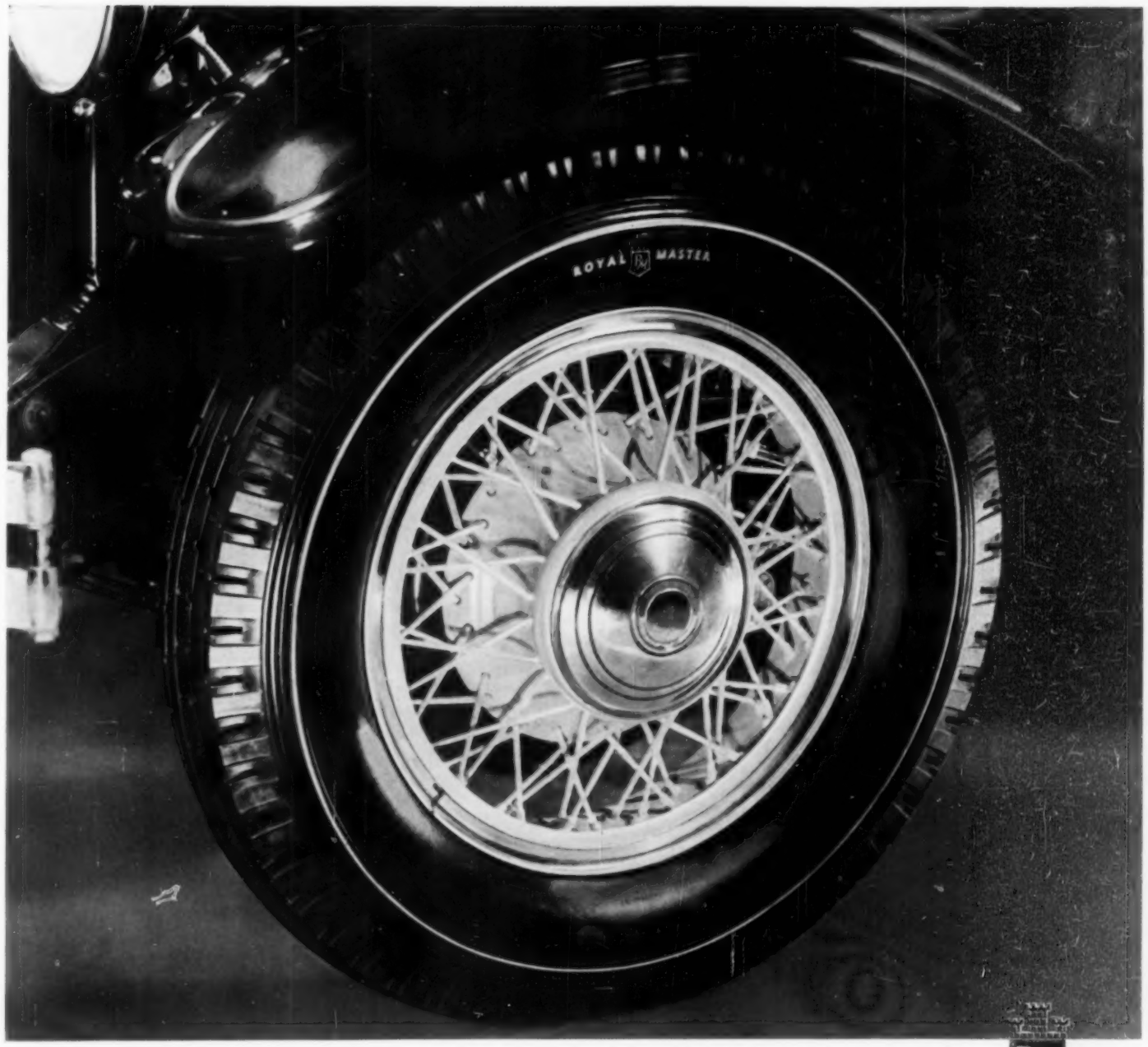
Increased efficiency in utilization of the potential energy of fuel is the outstanding feature in steam station development. In 1920 very few plants could generate, under regular operating conditions, a kilowatt hour of energy with less than two pounds of the ordinary grade of steam coal. By 1925 there were new stations that had an average operating figure of less than one and one-half pounds per kilowatt hour. Now, in the latest plants, the production of a kilowatt hour of electrical energy with less than a pound and a quarter of the average grade of coal is common.

[*Continued on page 93*]

Table I—The consumption of coal, oil and natural gas in the production of electrical energy in the United States. All central stations, electric railway plants, and certain other plants that contribute to the public supply are included. The following average heat values were used in computing: Coal, 11,000 B.t.u. per lb.; oil, 18,700 B.t.u. per lb.; natural gas, 880 B.t.u. per cu. ft. Data for columns 2, 4, 6 and 9 for 1920-24 from U. S. G. S. reports.

	THE ENTIRE CONTINENTAL UNITED STATES								
	Coal consumed		Oil consumed		Gas consumed		Total B.t.u. in fuel consumed	K.w.h. total production by fuel	B.t.u. consumed per kilowatt hour produced
Year	Tons	B.t.u.	Barrels	B.t.u.	M. cubic feet	B.t.u.			
1	2	3	4	5	6	7	8	9	10
	Millions	Trillions	Millions	Trillions	Millions	Trillions	Trillions	Billions	Thousands
1920	37.1	815	13.1	82	24.7	22	919	27.2	33.8
1921	31.6	695	12.0	75	23.7	21	791	26.0	30.4
1922	34.2	752	13.2	82	27.2	24	858	30.4	28.2
1923	38.9	855	14.7	92	31.4	28	975	36.3	26.9
1924	37.4	823	16.6	103	48.4	42	968	38.7	25.0
1929	44.0	968	17.0	106	51.0	45	1.119	66.0	17.0

Heat efficiency improved from 10.1 per cent in 1920 to 13.7 per cent in 1924 and to 20 per cent in 1929.
Coal equivalent per kilowatt hour produced: 1920, 3.07 lbs.; 1924, 2.27 lbs., and 1929, 1.55 lbs.



built by the world's largest producer of rubber RM . . . .

. . . *beautiful beyond all tires of the day*

There are degrees of quality in all things, and nowhere more truly than in super tires, as witness the U. S. Royal Master. It is priced a trifle higher, and built a great deal better. It is beautiful beyond all tires of the day. It confers the priceless advantage of complete freedom from tire troubles, serving flawlessly as long as you drive your car. To meet varying tastes, we fashion Royal Masters with cream-white side walls or in uniform black—each style surpassingly beautiful.

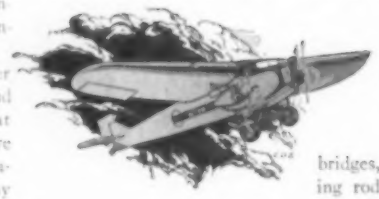
U N I T E D S T A T E S (US) R U B B E R C O M P A N Y

Harder Jobs Wanted

By the "Hard-Boiled" Aluminum Alloys

WHEN Charles Martin Hall worked out the process for extracting aluminum from its ore by electricity, in the woodshed in the backyard of his home in Oberlin, Ohio, on the morning of February 23, 1886, he virtually presented a new metal to the world. For prior to that time aluminum had been almost as costly as silver, and its use as a commercial metal was out of the question.

But Hall did not finish the job of making aluminum the useful metal it is today, any more than Christopher Columbus finished "discovering America" when he landed his little party on the island of San Salvador in 1492. Each of these explorers had merely unlocked a new door opening upon the future.



Other men were to enter the aluminum door and make discoveries that Hall could not even have pictured in his imagination at that time, any more than Columbus could have pictured the great expanse of the American continent, the broad Mississippi, the majestic Rockies, or the view that greeted the eyes of Balboa when first he glimpsed the waters of the Pacific.

Discoverers, Hall and Columbus were, but the great usefulness of their discoveries has been developed by men who came after them.

In Hall's case, this development work is being pursued today more aggressively than ever. Scarcely a month passes that some new discovery is not made in the great field of aluminum which he opened up just 44 years ago.

The aluminum that Hall produced made wonderfully fine cooking utensils, and wire for electric cables and, later on, foil for wrapping food products and confectionery, and collapsible tubes for tooth pastes, cold creams and other toilette preparations, to mention but a few of its hundreds of services.

But when it came to carrying a heavy load or standing severe punishment, Hall's aluminum had its limitations. It lacked strength.

That seemed most unfortunate. Here was a metal only one-third as heavy as the older metals, a metal that would conduct heat five times as fast as iron or steel, a bright metal that would not rust or tarnish from exposure. In short, here was a metal engineers and manufacturers had been needing for years. But it was not strong enough for the heavy duty required in many fields of industry and transportation.

However, all that was to be changed. Other "explorers" were following hard on Hall's heels—research scientists whose point of view is that when a certain quality is necessary, some way can be found to develop it.

They took aluminum into their metallurgical laboratories and began to experiment. At first there was much mystery about it all. But today, we know that these scientists were merely applying to aluminum the age-old science of "alloying"—of melting a metal and while it is in a molten state adding small experimental quantities of other metals, until a formula is found that gives the qualities desired, as nearly as it is possible to secure them.

Someone has aptly described an "alloy" as a marriage of two or more well-disposed metals. What happens in this "wedding" is that by taking a large amount of a metal with certain distinctive properties (in the case of aluminum, lightness and high heat conductivity and resistance to corrosion) and adding to it very small quantities of other metals with certain other characteristics, the metallurgist gets a third metal, surprisingly different in its properties from the metals he has combined.

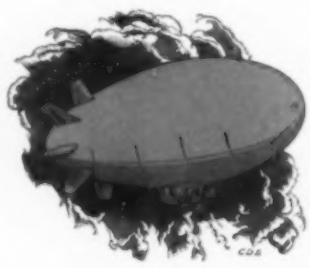
That is what the research scientists did with aluminum. They added minute quantities (less than five per cent) of certain other metals, and in the end they produced several new forms of aluminum—tough, hard, strong—the equal of structural steel, in strength, but with only about one-third the weight.

Aluminum Given Harder Jobs

Then for the first time aluminum was available to engineers for structural use in airplanes, railroad and trolley cars, automobiles, and for structural shapes for building purposes and bridges, oil tanks, machine parts, locomotive connecting rods, and other services where only what someone has picturesquely described as "a hard-boiled metal" could be expected to stand the gaff.

And yet it was not quite ready—not for the heaviest duty. Just as steel has to be tempered to give it its greatest strength, so it was found that these strong aluminum alloys had to be heat-treated to give them the desired toughness.

Before the World War not a single strong aluminum alloy was being made in America, but in 1919 the Aluminum Company of America established Research Laboratories. Since then its scientists and engineers have developed alloys that have amazingly strengthened aluminum for its important work in the world, and without materially changing the characteristic lightness and brightness of the parent metal which Hall made commercially practicable.



Expressed in terms of industrial use and transportation, equal strength is secured with half (or less) of the weight of materials formerly used, which means power saved . . . dead weight decreased . . . pay load increased . . . quicker acceleration . . . quicker deceleration . . . long life . . . low maintenance . . . a step toward better dividends.

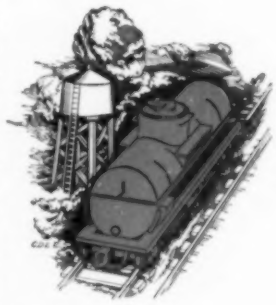
These strong aluminum alloys can be cast, rolled, extruded, machined, drop-forged, or worked in almost any desired way. They can be welded or riveted. And because they are so light in weight, they can be lifted and handled more easily than the older metals in the fabrication and finishing processes.

All this explains why strong aluminum alloys are today used so widely for automobile pistons—more than fifty million pistons trademarked Lynite have been produced from a special grade of aluminum alloy in the past ten years—and to paraphrase the popular saying, "Fifty million pistons can't be wrong!"

It explains why railroads have begun to turn to strong aluminum alloys for bodies and roofs for their passenger coaches, and driving rods for their locomotives.

General Atterbury Makes a Prophecy

In an article in a recent issue of "The American Magazine," General W. W. Atterbury, President of the Pennsylvania Railroad, is quoted as predicting "Aluminum is to compete with steel in car and locomotive building. We shall ride in railroad coaches built like automobile bodies—with aluminum-alloy bodies and steel chassis—behind engines of aluminum and steel. This lighter metal which has the strength of soft steel, will add a third to the carrying capacity of trains, and introduce a new giant into the mechanical construction field."



This would not be possible without these hard-boiled aluminum alloys. Nor would our progress in aviation. For airplane manufacturers employ special sheet aluminum alloys for wing coverings, and drop-forged aluminum alloy propellers, and cast aluminum strong alloy radial engine crank cases—to mention only the most obvious uses in airplane engineering.

In the field of electrical appliances, the strong aluminum alloys have made possible the light, efficient and economical machines we use in our homes—electric washing machines, vacuum cleaners, vibrators, for example. Nearly all makes of these appliances employ aluminum strong-alloy cast or forged parts.

In business offices, railroad dining cars, hospitals, and hotels, aluminum chairs made from these strong alloys are rapidly replacing wood chairs.

In the machine-tool industry these "hard-boiled" aluminum alloys are proving very useful and holding down jobs in which only a strong, tough metal will serve.

The outboard motors used on small pleasure boats are made of strong aluminum alloy castings and drop-forgings. They make possible the fun of outboard motoring.

On our city streets, store fronts are beginning to be made from mouldings and shapes of these strong alloys. In designing office buildings, railway stations, churches and public buildings, architects are employing aluminum alloys for spandrels and decorative cornices and trimmings.

Many Minds at Work

Charles Martin Hall started it all. But the aluminum that is used in America today—and American aluminum is the highest standard in the world—is the result of years of intensive research and painstaking experiment by the research and development engineers of the Aluminum Company of America. Many minds have been at work to increase the usefulness of this remarkable metal.

In order to establish the identity of its aluminum and the strong alloys of this aluminum, this Company has created a trade name. This name is made up of three syllables, AL-CO-A, standing for the beginning letters of the principal words of its name: AL uminum CO mpany of A merica.

Though ALCOA ALUMINUM is the finest made today, the period of exploration in the field of aluminum is only begun. Just as the steel industry is entering a new age of alloys, so is the Aluminum Company of America facing forward and working ten, fifteen, twenty-five years in the future, in order that when the world needs a light metal with characteristics which as yet we cannot even imagine, it will be ready for service in still harder jobs. In fact, harder jobs are wanted today for these "hard-boiled" aluminum alloys! ALUMINUM COMPANY of AMERICA; 2402 Oliver Building, PITTSBURGH, PA.

Table I presents statistics of fuel consumption of the country as a whole. In terms of quantity of fuel the improved efficiency from 1920 to 1925 was sufficient to save the equivalent of 15,000,000 tons of coal in the year 1924. The 1929 output has been secured with the equivalent of 50,000,000 tons less of coal than would have been necessary under 1920 conditions, or a saving greater than the total amount of coal consumed during 1929 by plants generating electricity for public use.

Among the factors contributing to the improved efficiency are more thorough combustion of coal and the conservation of heat by improved furnaces, larger boiler and turbine units, steam and air preheating, by bleeding and increased steam pressures.

In 1920 the 20,000 KW machine was large; there were but few of them. By 1925 several 50,000 KW units were being built and installed. The 100,000 KW steam-driven electric generating machine is now in successful use. Three hundred pound pressures were high in 1920. A few large plants of 1924 and 1925 design used 550 pounds, and one was put into use with a 1,200 pound boiler and 1,000 pounds at the turbine. At present in new designs there is a general trend toward the highest pressures of 1925.

The use of powdered coal as steam-making fuel has extended. It is particularly good in the stand-by plant as banking of fires is eliminated and a minimum of attendance is required.

While practically all of the increased efficiency has been obtained on the heat side of the generating plant (the greatest opportunity for improvement existed there and still does), much has been done in generator design and in central station control.

It may be that the over-all size of the plant has about reached its limit. It has increased from 100,000 KVA in 1920, to 300,000 KVA in 1925, and 750,000 KVA now. It appears that there are only three or four places in the country where this large size can be called advantageous or justified.

Water power engineering

Notable items of hydro central station development include the manufacture and successful operation of the 75,000 horsepower turbine in a single unit, the development of various devices in connection with the draft tube and tail race to increase head, and the building of remotely controlled or automatic power plants.

Efficiency in the turbine has increased but little. In that remaining margin there was not much upon which to work. The vertical reaction machine has been selected for most of the low and medium head plants, with the impulse wheel generally installed for the high head of developments of the mountain and Pacific states. However, for a few high head plants the reaction turbine has been designed and operated satisfactorily. The propeller type runner is a development of the decade that gives high efficiencies and good operation. Adoption of higher specific speeds of runners has resulted in a reduction of size and cost of generating units.

Methods of hydro plant testing have improved, particularly water measurement. The National Hydraulic Laboratory has taken an important part in hydraulic research. Studies by individuals, by companies, and by the government have added much to our available data on water resources and development costs.

The quantities of earth and rock moved and concrete placed in the past ten years have been enormous. However, to fairly describe the civil engineering accomplishments, each project would have to be handled as the special problem that it is.

Transmission, substations, and distribution

Higher voltages, longer lines, duplicate heavy-duty circuits, better control, and slightly lower losses mark the transmission developments. Maximum voltage in 1920 was 150,000; 1923 saw the first higher voltage in use, 220,000. The maximum is still 220,000. Higher voltages can be controlled and their equipment built, but have not appeared to be economically justified as yet. With the scattered large-sized steam plants in industrial districts, 125 to 150 miles is about the maximum distance for transmitting large quantities of power over single lines. So in few cases have voltages over 150,000 been thought justified in the eastern half of the country.

The high voltage line completely encircling large cities has been extended in use. Really an extension of the power house high tension bus, it probably, by having numerous substations, has done as much as any one thing to insure a continuity service in the city.

High tension underground has been delayed longer than desirable because of the lack of a satisfactory high voltage cable. In 1920 there was very little underground above 15,000 volts. An 110,000 volt cable is now available, but the cost has prohibited its use except where very large concentrated city loads are such that they can no longer be handled by the admittedly undesirable nearby plant. Automatic substations, while not new to the decade, have increased in popularity.

Distribution systems of hundreds of small cities and villages have been rebuilt with heavier conductors as large companies have acquired the properties either from the municipality or in consolidation of companies. Whole suburbs have been laid out for and supplied with underground electric service.

Illumination and electrical appliances

Illumination presents more contact points between the industry and the public than does any other use. A gradual change in the lamp itself, better direction and reflection of the light, our homes wired in a manner to make them more truly electrical, not only in lighting and decorative effects, but also for the use of appliances—all these are notable accomplishments. A really effective placing of the street light and the production of

Table II—Central Station Capacity and Principal Items of Load in the United States by Sections—1920-30

Section	Central Stations Capacity	Domestic & Commercial Lighting Customers	Power at Mines & in Mfg. Plants		Consumption of energy generated by Central Stations			
			Total	Elec. Motors operated by power purchased from Cent. Sta.	Lighting	Power in Industry*	Electric Rys. & Electrified Steam Roads	Total
	Jan. 1, 1920	Jan. 1, 1920	1919 Census		1920			
	Thousand KVA	Thousands	Thousands H P		Millions of Kilowatt hours			
New England	1446	686	3860	1163	411	1300	310	2021
Middle Atlantic	3535	1282	10657	2847	1150	4450	1760	7360
South Atlantic	1565	530	3644	1153	345	2720	470	3535
East North Central	3570	1855	8885	2803	926	4260	1600	6786
West North Central	1286	963	1911	671	484	1275	285	2044
East South Central	547	354	1853	428	160	645	235	1040
West South Central	482	303	1784	259	135	505	85	725
Mountain	645	358	1402	583	230	1210	183	1623
Pacific	1533	940	2115	953	740	2560	710	4010
Total U. S.	14609	7271	36211	10950	4581	18925	5638	29144
	Jan. 1, 1930	Jan. 1, 1930	Jan. 1, 1930		1929			
New England	3700	2090	4700	2250	1670	2830	560	5060
Middle Atlantic	8100	5500	13000	5800	6880	10060	2500	19440
South Atlantic	2600	1430	5500	2850	1290	7250	675	9215
East North Central	10500	5500	13500	7600	4620	12300	2770	19690
West North Central	3900	2860	2250	1200	2200	2560	315	5075
East South Central	1600	880	2550	1050	750	1860	360	2970
West South Central	1400	1100	2500	800	660	1850	135	2645
Mountain	2060	660	1750	1050	580	2400	225	3205
Pacific	3440	2200	3250	2150	2310	6250	1060	9620
Total U. S.	37300	22220	49000	24750	20960	47360	8600	76920

* Includes the motor load represented by Motors at Mines and Manufacturing Plants and in addition the Chemical and Industrial Heating Loads.

ESTABLISHED 1818.

Brooks Brothers,

CLOTHING,

Gentlemen's Furnishing Goods.

MADISON AVENUE COR. FORTY-FOURTH STREET
NEW YORK

Outfits for Midsummer Sport

Send for "A Wardrobe for
LAWN TENNIS & YACHTING"

BRANCH STORES
BOSTON
NEWBURY CORNER OF BERKELEY STREET
NEWPORT PALM BEACH

proper devices for highway lighting are new to the ten-year period.

The electrically operated refrigerating plant for the home has been made practical in the decade. Range regulation has been simplified. The electric laundry, the electric kitchen, the electrically heated bathroom, the electrically cooled bedroom, the electrically operated sewing room, electrically cleaned floors are not, of course, developments of the period, but their improvement to ultimately make possible the 100 per cent electric home has progressed far.

Industry

Scientific developments of the 1920-30 period in the electrification of industry that will have great effect upon central station production are in the electrochemical and electrometallurgical fields.

For several years before 1920 electric furnaces were available for some special heating processes. Furnaces for steel foundry use, and some in malleable shops, were put into use in 1919 and 1920 with quite general success. Very little extension was needed up to 1925, but since many new installations with improvements have been made, bringing to the central station a load desirable as to both power factor and load factor.

In the field of electrochemistry, as apart from the operation of electric furnaces, zinc and aluminum production are among the leaders. Magnesium, electrically produced in commercial quantities, is a development of the decade and in the last five years has assumed importance. The production of fertilizer in concentrated form is just beginning and has a potential demand for large quantities of power as the process becomes more nearly perfected.

The electrical engineer has succeeded in producing a satisfactory high power factor motor in the small sizes. The electrification of excavating equipment, the replacement of steam by electric hoists in mines, the complete electrification of many coal mines, cutters, loaders, and all haulage motor operated, have taken place rapidly.

Even though the industrial load is nearly 65 per cent of the total central station load, except in this general way, it is not possible to describe here the engineer's part in the electrification that has taken place. It has been a process of motorization and application of electricity in nearly every branch of extractive, transformative, and distributive industrial endeavor.

Central station capacity and load

At the beginning of the 1920-30 decade there were in America central stations having a total capacity of 14,609,000KVA. By 1925, additions and new plants made the figure 25,800,000. At the end of ten years the *rated capacity of all generators* of central electric light and power stations in the United States *is* 37,300,000 *KVA*. The 1920 generating capacity has been multiplied by over two and one-half. Or if based upon population, there has been an increase from 0.138KVA to 0.316KVA for every man, woman, and child in continental United States. From where has the demand that required such an enormously increased capacity come?

Two principal sources are responsible: industry as represented by manufactures and mines, and classification, lighting, comprising residential, commercial, and municipal. Although the greatest relative change has been in the lighting load, industry now, as in 1920, has much the greater requirement. The third demand is transportation. Its change has been relatively small.

At our manufacturing plants and mines as reported by the 1919 census, there was installed power-supplying equipment of over 36,000,000 horsepower capacity (manufactures 29,500,000; mines 6,700,000). Thirty per cent was in motors operated by energy purchased from central stations. Now with 49,000,000 horsepower in manufacturing plants and mines, slightly over 50 per cent depends upon central stations for its power. This makes an increase in motor capacity of 13,800,000 horsepower. The energy consumed by these motors and by industrial heating and chemical processes not represented by the horsepower figures was 28,375,000,000 KWH more in 1929 than in 1920. Table II presents the statistics in some detail by sections of the country.

The lighting load has shown a very much higher proportional increase. *The number of lighting customers* was 7,271,000 January 1, 1920. Now there are 22,220,000, and the average consumption of electrical energy per customer is nearly 50 per cent higher than ten years ago. Thus the total energy increase for this class has been from 4,581,000,000 in 1920 to 20,960,000,000 KWH in 1929. It alone used as much last year as the total production for all purposes in 1915.

In 1920 the central stations had around 5,500,000 residential customers. It was estimated that 25 per cent of the homes were then adequately supplied with appliances. But by 1925 when an additional 5,500,000 residences had been connected to central stations, competent authority estimated that only 18 per cent had a full equipment of the common appliances. Intensive educational campaigns were begun about the middle of the decade. Research work was placed under way to secure more data relative to the value of appliances to both the serving utility and the customer. Electric home demon-

"Advertising, as a Tool of Distribution, has gained in Accuracy . . ."

says **FRED W. SHIBLEY**
Vice-President of the Bankers Trust Company and author of "The New Way to Net Profits"

FRED W. SHIBLEY

"It can be made a most reliable sales medium, when placed wisely after an exhaustive market study."

IN this brief statement Mr. Shibley at once describes the function of advertising and indicates the method which is essential to its successful use.

Market study is taking a place as one of the most important branches of practical economics. In order that advertising may be properly planned, it is necessary to know in detail not only the wants of prospective consumers, but also their psychology and their whereabouts, so that their minds and their markets may be reached at the lowest cost.

Directed by the facts which this original study reveals, selling effort now gives its best return when made an integral part of productive activity. Today the aim of far-sighted business men is to fuse production and distribution into a single coördinated process, governed throughout by facts and by accurate planning.

In forwarding this important work, the J. Walter Thompson Company has successfully served many of the country's leading enterprises. Extensive research into the problems of distribution has enabled this Company to formulate market strategy which has been instrumental in economically promoting the products of its clients in both domestic and foreign markets.

Two folders, entitled *"Selling at Home"* and *"Selling Abroad,"* have been prepared to show the scope of the service of the J. Walter Thompson Company.

Either or both of these folders will be sent to executives interested. Write to the New York Office and copies will be forwarded promptly.

J. WALTER THOMPSON COMPANY

New York • Graybar Building • 420 Lexington Avenue

Chicago, Boston, Cincinnati, San Francisco, Los Angeles • Montreal, Canada • London, Paris, Madrid, Berlin, Stockholm, Copenhagen, Antwerp, Warsaw • Alexandria, Egypt; Port Elizabeth, South Africa • Buenos Aires, Argentina; Sao Paulo, Brazil • Bombay, India • Sydney, Melbourne, Australia • Batavia, Java

The farm is getting closer to town. Over $800,000,000 go into new road construction yearly. Last year 3,881,408 new passenger cars were put in service. As a result, more people shop in town. Study of this concentration aids in the planning of market strategy.

Roads are one of the chief factors in deciding shopping areas. The principle of grouping tributary purchasers about market centers for the purpose of finding and classifying true markets has been followed for several years by the J. Walter Thompson Company.

LOOSE GUMS LOSE TEETH

Prevent receding gums by Tek-sercising . . .

There is little warning. Unless you keep gums firm and tight against the teeth you risk "under-the-gums" decay. Then you *are* in trouble. Make Tek the protector of your teeth and of your gums, too.

• • •

Tek-*sercise.* Tek's extra width makes gum massage automatic with each cleaning stroke. This dual action keeps gums firm and healthy. It is called Tek-*sercise.*

• • •

Scientific. The number, trim and spacing of Tek bristle tufts were determined scientifically to give the greatest efficiency in cleaning every curve of your dental arch.

• • •

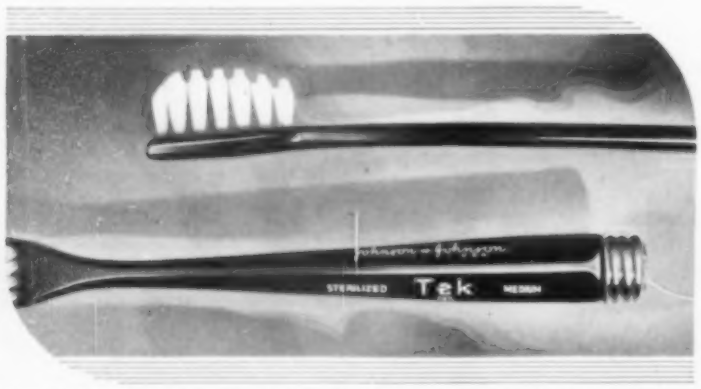
Bristles. The Johnson & Johnson laboratory searched world markets to obtain for Tek its snow white bristles whose resiliency withstands vigorous use and daily dipping in water.

• • •

Dental Floss. Use floss to clean the spaces between your teeth. There's a supply in the handle of one Tek model. Tek with flat handle 50c. Tek with floss in handle 75c. Tek Jr. 35c. Handles in beautiful pastel colors.

The extra width of Tek's brush-head makes gum massage automatic. Your protection against Receding Gums.

Tek
the modern
TOOTH BRUSH



Johnson & Johnson, New Brunswick, N. J., world's largest makers of dental and surgical dressings

strations were staged. Service surveys were made by the power and light utilities. The results are mutually satisfying to the company and consumer. Now with nearly 19,000,000 homes with electric service, over 30 per cent are well equipped with electric appliances in addition to lights.

The electric railway load is larger than in 1920, but the increase has been relatively slight. Some sections show practically no change. Others, in which are located large centers of population, have greater demands about in proportion to the population growth. In addition, and shown by Table II with the electric railway consumption, a few of the large cities and their surrounding territory now use some energy for steam railroad electrification.

Steam road electrification demands upon the central stations of electric light and power companies have almost entirely developed in the past decade. At the time of the first electrification, around thirty years ago, the railroads built their own power plants and continued the policy up to 1920 or thereabouts, when the early contracts were made by the railroads and central station companies for energy. Terminal electrification during the past few years has to some extent been following the plan of purchasing power. Although this was advocated years ago by progressive power company executives, not until the railroad company officials were convinced that a power service equal to or better than their own could be furnished by the electric power industry did the railroad corporations contract with the power companies for energy. It is now becoming widely recognized that the production of electrical energy is not the transportation companies' business and that the plan of purchasing it from the central station companies is superior.

Summarizing, there has been used in 1929 a total of 76,920,000,000 KWH, as against 29,144,000,000 KWH in 1920. This means that the central electric light and power stations have had *to generate 92,000,000,000 KWH.* A slightly improved capacity factor has made this possible with a generator capacity that has not grown quite in proportion to the load. This factor is discussed in another section. A much better capacity factor may be expected as the load becomes more evenly balanced and interconnections are extended.

Figure I indicates graphically the relative changes that have taken place in central station load in the past decade. Figures II and III present curves of central station capacity and production. The production figure of 1929 is comparable to those of the U. S. Bureau of the Census for prior years. The 92,000,000,000 is production of central electric light and power stations only. There is not included energy generated by electric railway plants and such other power stations as are reported upon monthly by the U. S. Geological Survey.

In Figure II is the division of central stations as between fuel

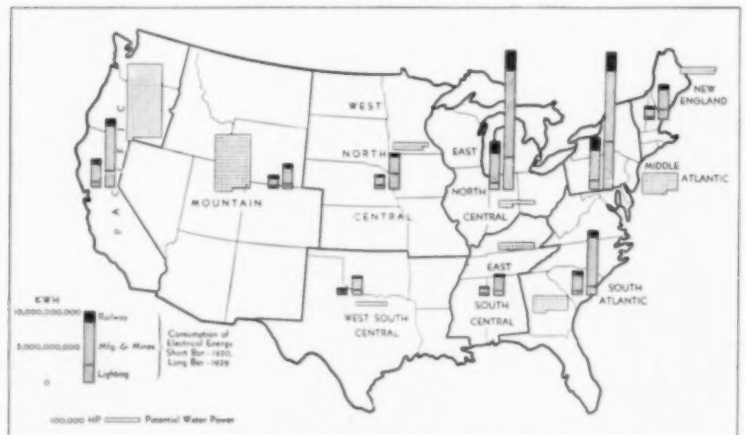


Figure I. Consumption of Electrical Energy 1920 and 1929; and Potential Water Power, by Sections of the United States.

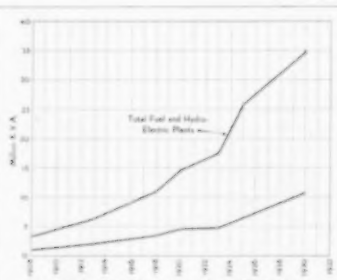


Figure II. Capacity of Generators in Central Electric Light and Power Plants in the United States

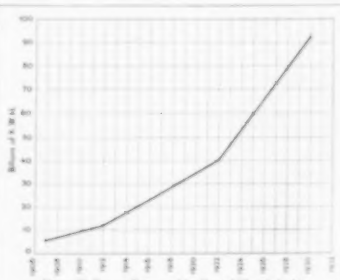


Figure III. Energy Generated by Central Electric Light and Power Plants

INSURANCE

A PERSONAL MATTER

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• WHEN a man buys life insurance he is taking a step of grave responsibility, and usually he knows it. Not only is he voluntarily giving up the enjoyment of a part of his present income, but he is entrusting the future welfare of his family to a group of strangers. • He does it on faith, and sometimes his faith wavers. • To such a man, if he is fortunate enough to be insured with the right company, a letter comes soon after he has paid his first premium. It is a frank and friendly letter, with a solid dignity that strengthens his confidence. It is typewritten, and pen-signed by the President. And from the moment he opens the envelope the policyholder senses the fact that it really comes from the head of the company. *The look and feel of Coupon Bond identify the letter instantly as genuine.* • Coupon Bond makes no compromise with quality. It is a supreme achievement in the making of bond paper—an all-rag bond in which only clean, strong, new rags are used. Because of its beauty and character, and because its watermark has become a universal symbol of prestige, Coupon Bond is today the choice of American business leaders for their executive letterheads. • Upon request, we shall be glad to send you our portfolio, "The Modern Trend in Letterheads," and a new booklet, "The Executive Letter." (When writing please use your business letterhead.) ¶ *Coupon Bond is but one paper in the Eagle-A Line of Bonds, Ledgers, Writings, Index Bristols, Offsets, Covers, Book Papers, Mimeograph and Manifold Papers—the* right *paper for every business purpose.*

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burning and waterpower plants. Less than 30 per cent of the total KVA at the present time is capacity of hydroelectric plants. And as to location, 82 per cent of the fuel burning plant capacity and 52 per cent of the hydro plant capacity are east of the Mississippi. This indicates the extent to which the electrification of industry has had to depend upon fuel. It must continue to use fuel to produce the major portion of the power required. The ratio of waterpower plant capacity to fuel plant capacity can increase but little if any, and ultimately it must decrease a good deal.

The figures of the U. S. Geological Survey's estimate of potential waterpower in the United States (announced 1924) are the basis of this statement. The potential developed and undeveloped waterpower in the United States available 50 per cent of the time is 55,030,000 horsepower. We now have primary power capacity as follows, not including steam railroads:

	Horsepower
Central electric stations	40,000,000
Electric railway plants	4,000,000
Power plants of manufacturing establishments and mines (not including motors operated by central station energy)	24,250,000
Total	68,250,000

Central stations of the electric light and power industry now have a capacity equal to nearly 75 per cent of all the potential waterpower in the country. The distribution of the potential waterpower is:

Section	*Horsepower*
New England	1,978,000
Middle Atlantic	5,688,000
South Atlantic	4,464,000
East North Central	1,391,000
West North Central	1,844,000
East South Central	2,004,000
West South Central	888,000
Mountain	15,513,000
Pacific	21,260,000
Total	55,030,000

From this distribution and from Table II, it is seen that while only 29 per cent of the central station capacity is west of the Mississippi, 72 per cent of the nation's waterpower is there. Further, just about 80 per cent of industry, as represented by manufacturing and mines, is at present east of the Mississippi River. The nation's industrial center has moved from the Atlantic coast toward the Mississippi gradually over a period of scores of years. But for it to move to the location of our greatest waterpower resources, the mountain and Pacific states, is almost inconceivable. Can mountain states power be brought to Middle West industry?

The commercial aspect

Divide the decade into two five-year periods, analyze the acquisition of new electric light and power business during each; both are found to approach the condition of a seller's market. This is more evident during the first half decade due to the readjustment and catching-up processes after the War. But even though such was the case, it was accompanied by very little selection of new business. The load was taken as it came or as fast as the utilities could build plants and extensions to care for it. It represented a growth natural under the conditions, but not as would be planned to get the maximum use of equipment.

The selective procedure cannot be followed by the electric light and power utility to the extent of accepting or refusing new business offered it; but means for balancing the load and improving both power factor and load factor do exist. The new business of 1925-29 has been of a slightly more desirable kind in general than that of 1920-24. In the past six years, more than ever before, commercial departments have been seeking loads for off-peak periods, such as truck charging and certain heating and chemical processes; to get a wider use of household appliances; of electric signs; and to promote such other sales as balance the load. The results of the efforts are noticeable to a limited extent upon some load curves, just beginning in other cases. In another five years the ratios depending upon these factors will be materially improved.

Rates for some classes of service, business that has developed largely since 1920, were in the beginning figured upon a very indefinite basis. The electric range load is an example. Rule of thumb, without much rule at that, determined charges before the N.E.L.A. investigation of 1924-25. Other studies by this association have aided commercial departments in building rate structures and in the load selection problem.

It can be said that there are now fairly generally adopted basic rate structures for nearly all classes of service. Even as late as 1920 there were a great number of flat-rate residential customers. Many utilities charged a fixed amount per kilowatt hour regardless of quantity, modified perhaps by a monthly minimum. More equitable schedules have been or are being worked out by nearly every progressive company and for many municipally owned systems. Widely used today and showing the greatest growth in the past ten years is the rate structure combining service, demand, and energy charges. Methods of computing, applying, and billing vary, but the basic principles are similar, and in the ten years this type of schedule has become standard practice.

Agriculture is said to be the greatest industry of the nation, the

[*Continued on page 103*]

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"Sure you stopped *that* one—

but will this one stop *you*?"

Fire scores *two* hits when your business property burns. First he destroys your *property*. You meet that attack with fire insurance. : : Then you discover that Fire's *second* arrow of misfortune goes straight into the unprotected vitals of your business. It stops your business income—dead! : : Think of that for a moment. Face it as you'd face any grave business crisis. : : There will be many months of idleness to go through if your factory, store, or apartment block burns. Fixed expenses will *go on*—even if there isn't a cent of income. Taxes must be met—interest paid. Contract salaries—pensions for retired employees, perhaps—what a tremendous gap to fill—*without income!* : : What can you do? Arrange your fire insurance—*now*—to pay you during the idle months *after* a fire the rate of income your property would have produced . . . in addition to replacing the property itself. : : The Hartford agent will show you some figures about your own business that will startle you. If you need the income from your business, you need insurance that will adequately *protect* that income. It may mean the difference between security—and embarrassment—possibly disaster. Call the Hartford agent—NOW*. You can't act too promptly.

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The keys that gave her

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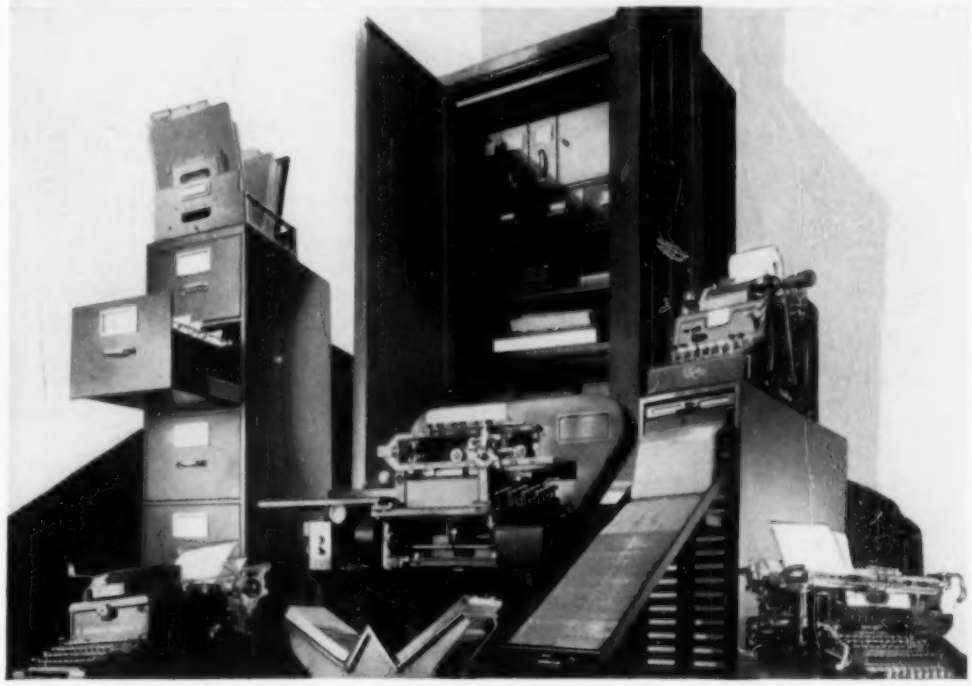
THE GREAT EMANCIPATORS



604 WHITES

HELP SWIFT move over 5 Billion pounds of meat annually

Waste—in time and product—has been shaved down to bedrock in the vast operations of Swift & Company.

More than 17 million animals go through the Swift plants each year where, with almost magic rapidity, they are converted into meats and allied products of the most perishable nature. Every operation is geared with uncanny accuracy to the ceaseless race against time. There is no guesswork. There can be no waste.

Swift & Company makes only 1.25% profit on its gross sales of a billion dollars. This represents less than a nickel a week in the meat bill of the average American family.

Distribution is the keystone in the operations of this great packer's 39 plants, 80 produce houses and over 450 branches spread throughout the United States and Canada.

Motor Trucks are an important aid to the efficiency of Swift distribution. They are called upon to lengthen the radius of operation, to speed up short hauling, to supplement branch line railroads.

In the vast fleet comprising several makes of trucks operated by Swift & Company there are 604 Whites. This fleet of Whites has grown through re-orders since 1913, when the first two Whites went into service.

In one city an ordinance requires that all fresh meat be delivered to the public markets before sunrise. Here a part of the Swift fleet of Whites works seven days a week, 24 hours a day, the engines being idle hardly long enough to cool off. From midnight to dawn these Whites ply the city, making deliveries of fresh meat to the public markets before sunrise. Starting at early morning with crews of new drivers, the same Whites take up the task of supplying city stores with Swift products.

The growth of this fleet of 604 White Trucks in the service of Swift & Company is a tribute to their efficiency in an organization where efficiency in all its operations has been developed to the highest point.

THE WHITE COMPANY, CLEVELAND

WHITE

A COMPLETE LINE OF FOUR AND SIX CYLINDER

TRUCKS

BUSSES

Electric Light & Power: 1920-1930

[*Continued from page 98*]

basic industry. The railroad man admits that, but his qualification is that transportation has made agriculture what it is. The statement is perhaps true. What about the relation of agriculture and the electric light and power industry? What can electricity do for the farms? A problem is presented the solution of which falls not to the commercial department, as such, but one which will require management, engineering, and legal thought as well.

There are in the neighborhood of 6,000,000 farms in the United States. Around 15 per cent have some kind of electric service, either their own direct current storage battery plants or central station connections. This electric service goes little further than lights for the buildings and a few household appliances. What is the motor capacity that might be advantageously used on these 6,000,000 farms? As yet we do not know. A good deal of study has been put upon the entire question in the past ten years.

Unless the average farmer can use a much greater amount of energy than the average urban lighting customer, it is difficult to make the service profitable to either farmer or utility. It is believed that the situation is better than in 1920. The report of the "Committee on the Cost of Rendering Service" in Michigan in 1922 states relative to forty-seven power and light utilities, "None of them reported profitable business from rural lines." In 1925, in one of the west north central states company officials stated that they were about breaking even on farm business. This was in a prosperous farming community, one which came through the period of depression much better than the average. There is more rural business being handled each year. It is becoming an appreciable amount to many middle western utilities. But to put the use of electricity by the farmer on a basis at all comparable to the benefits that even the smallest manufacturer receives, much new farm equipment must be devised. For the average American farmer, central station service is very much of a luxury. He knows as the matter now stands, when he can have it at all, that it must be charged toward a more comfortable life for his family and not as a money-making investment. He is sacrificing other things to provide that comfort. High investment per customer and a good deal of the large transformer and line losses are pretty apt to remain. The electric light idea must be supplanted by the electric power conception for economical farm use. The development of advantageous means so that the farmers' electrical energy consumption can increase with benefit to his operation is the only way that cost to him can be reduced and the utility serving can make a reasonable profit. As that gradually takes place, there is opened a wide field for the central station. Even two horsepower per farm would make a total equal to nearly one-third of the present central station capacity.

The financial side of the power and light industry

In this age we are rather prone to use the dollar too much as the standard of comparison. But when the attempt is made to gage the magnitude of our material things, the monetary unit is the one by which most of them are best measured. It seems that the curve Figure IV, capital invested in the electric light and power industry, immediately makes the observer realize the vastness of a great undertaking. Its magnitude, the rate of growth, and the confidence that the American investor has had in it are all portrayed. It cannot present a picture of the labor, the thought and study, and the sacrifices that have accompanied its growth.

A good deal of foreign capital went into our railroads and other industries. Electric light and power development has been almost entirely with American money, nearly 60 per cent of it in the past ten years. America's confidence has been such that it has been possible to finance to the extent of adding $5,700,000,000 in the decade. Financing to the amount of nearly $1,250,000,000 in 1924 was a remarkable accomplishment. Securities were put on the market faster than ever before, but even as the monthly offerings became larger, the cost of the money went down.

Three things seem to stand at the head of the list as being most important in electric light and power financing of the decade.

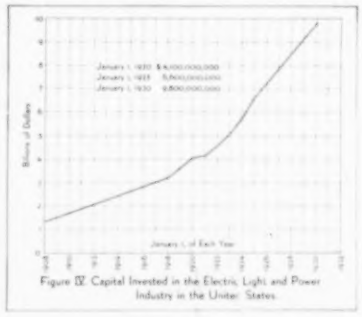


Figure IV Capital Invested in the Electric Light and Power Industry in the United States

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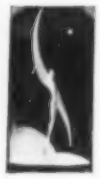

Waste energy..

barrier to progress and profit in industry.. dwindles and disappears under the scrutiny of the modern industrial engineer. The Rand Laboratories, Incorporated, is a group associated for industrial research..chemical, electrical, mechanical.

RAND LABORATORIES INC.

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They are not new to the period, but their application has been widely extended. They are the open end mortgage, customer ownership of stock, and the place of the holding company in the scheme of organization. But one of them applies strictly to financing. The other two have a bearing upon public relations, management, and operation as well as financing. The open end mortgage is primarily a financing means.

The desirability of the open end mortgage as applied to power and light properties came to be recognized very widely at the time of rapid expansion and heavy refinancing in the first half of the decade. The issue, based upon a fixed percentage of capital expenditures, immediately becomes an index of property value. Short term securities do not have to be issued at heavy discounts under normal conditions. Calling securities under unfavorable circumstances is largely eliminated. The serial bonds of the open end mortgage make unnecessary the expenses of a sinking fund. These bonds may all be offered as first mortgage and as a result sell at a relatively higher price that would make a purely refunding issue necessary because of a closed first mortgage.

Making the public a partner by sales of stock to customers was begun in the West, pushed most vigorously in the Middle West, and now it is hard to find a company that has not adopted it as one means of adding new capital.

From 1920 to 1925 the average holdings of all stock in power and light companies dropped from fifty shares per stockholder to about thirty. In 1919 sales of stock to customers were less than 195,000 shares. In 1924 the figure had been multiplied by ten and the average sales per year for 1925-29 have been 2,400,000.

The customer owns the power company serving him. This is not true as to proportion of investment or voting power. But the individual holders of small blocks of stock are the ones who are getting service and represent public opinion. Policies must be formulated to satisfy the customer. However, to satisfy him, not only must the property be maintained to give him the most efficient service and keep his investment intact, but it must be managed in such a manner as to pay him a dividend upon his investment. He therefore controls.

A good deal of the rearrangement and interconnection of properties that has taken place in the 1920-30 decade would have been well-nigh impossible without the holding company. The strength for bringing together credit and a consolidation of financing power must come from some such organization. Through it there has existed the means of averaging a common stock risk and securing common stock capital so that a safe investment is available to the public.

The financial structures of some of the operating corporations under holding company control have been quite severely criticized. It is said that the proper stock and bond ratio has not been maintained. It is true that those operating companies which closely adhere to a fifty-fifty division between stock and bonds, and in particular the ones that have but one class of stock, head the list as to financial rating.

Holding company service is not confined to financing. Engineering ability that could not be afforded by the independent company is available for application to that same property if under the direction of a holding company. Management that the independent system could never secure is provided by the supervising organization. On the whole dependable holding companies have been a real asset to the power and light industry through the last ten years and have probably done more than any other one agency to develop interconnection and superpower.

The great amount of money invested has been mentioned and a curve of investment increase presented. From where has the money come, and what has been its cost? Attention is directed to Figure V. First is the amount from company sales to customers. During 1920-24 this averaged $123,000,000 per year, and 1925-29, $240,000,000. This made only a small part of the total. Investment houses handled an average of $750,000,000 per year during 1920-24, and $875,000,000 per year for the remainder of the decade. Refinancing, however, required $250,000,000 per year for the post-War period 1920-24, and $235,000,000 per year for 1925-29. Refinancing of the first half decade had many millions of War-period short term notes to take care of, and that of the second half has included the calling of issues of

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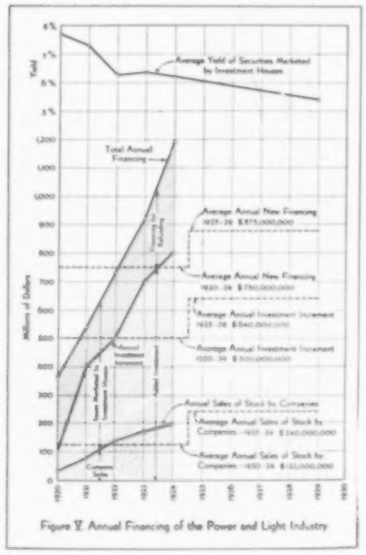
Yield
Average Yield of Securities Marketed by Investment Houses
Total Annual Financing
Average Annual New Financing 1925-29 $875,000,000
Average Annual New Financing 1920-24 $750,000,000
Average Annual Investment Increment 1925-29 $240,000,000
Average Annual Investment Increment 1920-24 $120,000,000
Annual Investment Increment
Annual Sales of Stock by Companies
Average Annual Sales of Stock by Companies 1925-29 $240,000,000
Average Annual Sales of Stock by Companies 1920-24 $120,000,000
Millions of Dollars

Figure V. Annual Financing of the Power and Light Industry

PLAYING BLIND MAN'S BUFF WITH VITAL FIGURES

is at best a stupid pastime—it's decidedly less fun when vacation schedules are robbing you of your experienced workers. Then's the time that still more frequent errors and delays confirm the feeling that you are working in the dark.

There's one sure way to remove the blindfold so that each day you can see clearly where your business stands. Monroe machines and Monroe short-cut methods intelligently applied to your own system will give your clerks time to produce those extra figures you need.

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HAIL AND FAREWELL

From the collection of the American Car and Foundry Company, makers of fine motor yachts.

Movies First in June Agriculture; Next Season Crop Now Selling

USUALLY described as the third of industries or lowest of arts, motion pictures might even be called, judging from results, first in agriculture. In one brief month, seeds are planted, produce sold, huge profits counted, and during the year that follows great peoples feed on the reluctant product with varying taste.

Barnum is generally held up as the model of showmanship; the circus is still considered, by lazy and receptive minds, the finest child of ballyhoo. Barnum! Each year the motion picture business, worshipping Barnum, leaves Barnum far behind.

June is the month. In June the film companies plant the seeds of their plans for a year, sell them promptly, in the fervor of the moment, to the nation's 20,000 exhibitors. Much of the product sold is planted in June only in the fertile minds of shrewd producers, go-getting salesmen, hopeful exhibitors, prodded public; it is sold, nevertheless, and most of it actually appears during the ensuing year. Some of it is pronounced good.

This year, as each year, motion pictures will spend more than ever before in making new pictures: $200,000,000, of which $175,000,000 will be spent on film production and the rest on new facilities, mostly new sound stages. But this year—and this is the prize idea of the year, a subtle keynote—there will not be more and bigger pictures, in the circus manner; this year there will be fewer and better pictures.

The twelve leading producers —Paramount, the Warners, Fox, Metro-Goldwyn-Mayer, Radio, United Artists, First National, Pathé, Universal, Columbia, Tiffany, Educational—will make 400 feature pictures and more than 1,000 "shorts." The 400 will be made for what 800 used to cost and will have, with all-star casts, the plots and tunes of richer minds, talk, and color. Announcements to this effect, given each of the various conventions of motion picture sales organizations held during June, brought cheers and applause from salesmen proud to be known as hard-boiled.

Paramount, thanks in no small measure to the financial difficulties and internal quarrels of the Fox organizations during the year past, again deserves to be considered first. "You can take it for granted," is the modest statement of Sidney R. Kent, "that we never turn out a bad picture." Paramount will make a minimum of 65 pictures and 300 shorts, one-fifth at the New York studios in Astoria, the remainder in Hollywood. Paramount is counting on familiar stars: George Bancroft, Clara Bow, Nancy Carroll, Ruth Chatterton, Maurice Chevalier, Dennis King, Harold Lloyd, the Marx Brothers, Moran and Mack, Charles ("Buddy") Rogers, and the newly arrived Jack Oakie. Paramount is hoping with two girls from abroad: Claudette Colbert from France and Marlene Dietrich from Germany. Paramount is looking forward to a picture version of *Berkeley Square*.

The Warners, who revolutionized the industry by forcing it into sound and then into color, will make forty-two features and numberless "shorts," many of them in several languages, to entice the waning foreign market back into the fold. The Warners have signed some enticing musical talent as, for instance, Oscar Straus, Jerome Kern, Sigmund Romberg.

Clarke & Sheehan

Led by Harley L. Clarke and the dynamic Winfield R. Sheehan, Fox has made a dramatic reëntry into the competition. Fox has combed the stage, the radio rooms, the night clubs for an extraordinary array of talent: John McCormack, Will Rogers, Beatrice Lillie, Kenneth MacKenna, William Harrigan, Willie Collier, Tom Patricola, retaining such screen stars as Victor MacLaglen, Edmund Lowe, and the celebrated pair of Janet Gaynor and Charles Farrell. Fox will make forty-eight pictures at a cost of $25,000,000.

Metro, perhaps the smartest of the producing companies (still on its own, incidentally, despite the sale to Fox) will make at least fifty pictures. Metro, wisely, keeps most of its plans in abeyance, awaiting a psychological moment and then working fast. However, Metro is definitely counting on *The Big House*, a prison picture, *Trader Horn*, largely made in Africa.

The Radio organization planned such a stupendous program that it induced the film trade papers to go to a bigger page size for one issue to tell about it. Possessing the largest sound stage in the world, Radio will make thirty-four pictures at a cost of $15,000,000, counting heavily on the newly signed Amos 'n' Andy of broadcasting fame, also Edna Ferber's new novel *Cimarron*, with Richard Dix.

Pickford, Swanson

United Artists takes Al Jolson away from the Warners to make *Sons o' Guns*, looks forward to a new picture by Mary Pickford and another by Gloria Swanson. Douglas Fairbanks still hopes to do a picture directed by the great Russian, Serge Eisenstein. *Hell's Angels*, made over a period of three years at a cost of $4,000,000, is a United Artists possession. Irving Berlin is preparing his first independent production.

First National, owned by the Warners, will make twenty special pictures, with Richard Barthelmess, Marilyn Miller, Otis Skinner, Ann Harding, *et al.* Universal will bring forth the smouldering Lupe Velez, the tuneful John Boles, and will remake *The Hunchback of Notre Dame* in sound. Pathé will make another twenty, starring Ann Harding, Fred Scott, Helen Twelvetrees, William Boyd, Constance Bennett, Eddie Quillen, and the operatic Mary Lewis. Tiffany, elated over the success of *Journey's End*, has elaborate plans for the new season. Columbia will make twenty pictures at a cost of $10,000,000, concentrating on old stage plays such as *The Criminal Code* and *Dirigible*. Sono Art-World Wide, which ought to be included among the producing companies, has $4,000,000 and expects to spend most of it on Cornelius Vanderbilt Jr.'s *Reno*.

Vans Take Mop; Double Mileage

Who.—The Missouri Pacific, largest of the southwestern roads, which owns or controls 11,000 miles of line; whose tracks reach every big traffic center of the Southwest, including New Orleans, Memphis, St. Louis, Kansas City, Texarkana (Arkansas), Galveston, El Paso, Brownsville (Texas), and Pueblo (Colorado); whose income reflects the growing prosperity of the region it serves (and dominates), jumping from a 1928 net of $9,512,700 to a 1929 net of $12,217,800; and which the I. C. C. consolidation plan makes the nucleus of one of the nineteen systems . . .

Who.—The Brothers Van Sweringen, who need no introduction . . .

What.—Announced their economic betrothal at the annual MOP (railroadism for "Missouri Pacific") stockholders' meeting. Eight of the seventeen directors, including former Chairman William Henry Williams, were displaced by eight Van Sweringeneers headed by Oris Paxton Van Sweringen himself, who is the new chairman. The Cleveland brothers engineered their coup by buying up last winter some 66.4 per cent of the total outstanding MOP stock . . .

Why.—Fateful is the conjunction of Van and MOP. To the former it means a doubling of their mileage (the C. & O., Pere Marquette, Nickel Plate, Erie, and other Van Sweringen roads all together just about equal the MOP's 11,000 miles of line) and a great step towards the Pacific. (MOP needs only the Denver & Rio Grande Western [half of which it controls] and the Western Pacific in order to reach San Francisco.) To the MOP the conjunction means the final dissolution of the tie that once made "Missouri Pacific" practically a synonym for "Gould" (the last Gould representative on the MOP, Finley J. Shepard, was one of the directors who went by the board at the accession of the Van Sweringens). Once again, under Vans as under Gould, the MOP figures in a major attempt to span the U. S. with one system.

Bargains in Everything–Silk, Tin, Steel, Fiction, Coffee, Sugar, Cars

DURING the month, here and there, U. S. citizens picked up bargains. Some 800,000 admirers of the fiction approved by Editor Ray Long stopped at some 60,000 newsstands, pulled about $280,000 from purses or pockets, and discovered they needed only $200,000. Each one thereupon noted that the *Cosmopolitan* now costs only a quarter, and each dropped a dime back in purse or pocket. In Manhattan, some went to a Schulte store, added one cent to the dime, and bought a fifteen-cent package of cigarettes. The U. S. mint, which made the dimes, was aware that in the great markets of Shanghai and Bombay, it could buy silver for thirty-four cents an ounce, the lowest prices in the world's history. And so it was with tin. And so with zinc. And lead.

Diamond-cutters in Belgium, organizing patrols to see that none violated the agreement to work only fifteen days a month, knew that the incredibly rich American market was for the moment dull, cautious, bargain-hunting. In Japan were 6,000,000 pounds of spring cocoons, from which crawled millions of worms to spin more silk than the world can possibly buy, even though silk, at $3.60 a pound, is a record bargain. In Malaya, rubber accumulated in warehouses until there remained undistributed throughout the world more than 400,000 tons, and at Akron, Ohio, the great tire companies prepared to buy at twelve cents a pound. Four years ago the price was eighty-five cents; once it touched $1.20.

Bargain rubber will mean, in time, bargain tires. Early in the month, a tire cut of 5 per cent to 10 per cent was daily expected. Thus was an automobile's upkeep made cheaper, and at the same time its initial cost seemed to be tumbling while Mr. Ford slashed prices $5.00 to $25; Mr. Chrysler $10 to $35 (on De Sotos); and Mr. Macauley took $400 off the price of Packard.

So it went, and everywhere there were bargains to be found, whether in fiction or Packards or cheese or tartaric acid. In Washington, a President and several cabinet officers surveyed the situation, opined that the bargain season would not last much longer. Secretary of Commerce Robert Patterson Lamont declared that business would recover in three months. Secretary of Labor James J. Davis announced that Herbert Hoover alone had prevented great wage cuts in the time of depression. Meanwhile June showed low imports and exports, lessened production, and a commodity price list which included these more or less startling items:

Coffee.—Nine cents a pound. Recent high was twenty-three cents in August, 1926. Steady decline from seventeen cents a year ago. Coffee is one commodity notably cheaper to consumer. An amount of coffee costing $1.00 in 1913 cost $1.66 in 1929 and $1.38 in 1930. Disturbing factor: too many beans for the thirsts.

Silver.—Thirty-four cents an ounce. This is the lowest price in the history of silver; is steadily falling. Impoverished condition of China, chief silver user, and disturbed conditions in India, second largest silver user, chief causes. The Chinese silver dollar, par fifty cents, declined to thirty-five cents. Four Shanghai banks closed in one day. All factors discouraging.

Copper.—Twelve and one-half cents domestic; thirteen cents export. Copper held at eighteen cents a pound for twelve months, was cut to fourteen cents in May, 1930, through "buyers' strike." Cut produced record May sales, then dullness again. Disturbing factor: consumers holding out for twelve-cent copper; dividend cut by Kennecott.

Tin.—Thirty-one and one-half cents a pound. Lowest tin price since 1922. Tin prices fell steadily from around seventy cents a pound in December, 1926; have now declined for forty months. Zinc and lead were also at long time low points.

Cotton.—Sixteen cents a pound. In April, 1929, cotton was twenty cents a pound. Disturbing factor: continued diminishing of American cotton's dominating position in world markets.

Silk.—Three dollars and sixty cents a pound. Another new all time low. The year-ago price was $5.25. Disturbing factor: a 10 per cent increase in Japanese spring cocoon crop with stocks already at record levels. The United States last year imported silk valued at $432,340,000, making silk, for the third successive year, the biggest U S. import.

Sugar.—Three and three-tenths cents a pound. Sugar was lower than at any time since 1902. Protracted tariff wrangles have had a most unsettling effect on sugar prices.

Rubber.—Thirteen and three-tenths cents a pound. Rubber was between eighty and ninety cents a pound in January, 1926; has been down to eleven and nine-tenths cents a pound this year. Disturbing factor: failure of Anglo-Dutch rubber-tapping holiday to prevent rubber stocks from reaching 420,000 tons, world's largest supply.

Wool.—Thirty cents a pound. Wool was close to fifty cents a pound during most of 1928, has since steadily declined.

Hides.—Fourteen cents a pound. Recent high in hides was nineteen and one-half cents in September, 1929. But in spite of decline in hide prices, boots and shoes showed a small price increase.

Steel.—Finished steel, two and two-tenths cents a pound. Scrap, $16 a ton. The finished price is not much above the low-water post-War slump figure reached in February, 1922. Scrap was around $18 through most of last year. Encouraging factor: large orders from natural gas pipe lines. Disturbing factors: poor railroad earnings and passing of spring auto production peak without peak reaching any notable height.

Hershey Earns More for School By Cheaper Cocoa, Bigger Bars

IN THE first quarter of 1930, U. S. corporations potent enough to be included in trade and market averages showed a profit loss of some 20 per cent, compared to their 1929 figures. But no shrinkage was reported by Hershey Chocolate Corp., chocolate-bar and cocoa company most of whose stock is held in trust by Founder M. S. Hershey for the Hershey Industrial School at Hershey, Pennsylvania. The Hershey Corp. made $2,265,140 in the first quarter of 1929 and $2,320,818 in the first quarter of 1930. Furthermore, sales in the second quarter were running ahead of their 1929 figure (partly because of a 25 per cent increase in the size of the Hershey almond bar).

The decline in commodity prices has been the most important factor in Hershey progress. Best known for its five and ten-cent chocolate bars, which account for about $25,000,000 a year, 60 per cent of the company's total income, Hershey is the world's largest consumer of cocoa and also a large consumer of sugar. In June, 1930, cocoa beans were selling under 8 cents a pound, compared to 9.2 cents at the end of 1929, 10.75 cents in September, 1929, and an average five-year price of 12.11 cents a pound. At the same time, raw sugar had declined to 1.4 cents a pound, the lowest price in its history. Almonds, tin foil, paper, cardboard, and milk stood also at new long time low levels, and Hershey uses daily some 450,000 quarts of milk together with large quantities of the other materials mentioned. Meanwhile with no lowering in prices and a slight increase in sales, Hershey is steadily increasing its profit margin. Falling commodity prices work against as well as for the manufacturer, since a lowering in the price of materials may represent an inventory loss greater than the increase on the profit in the finished product. Hershey, however, has set aside a depreciation fund to cover inventory declines, and with this loss already accounted for, the profits for the second and third quarters are expected to be greater than even the excellent first-quarter showing. Full results of commodity price declines will not be evident until about August.

In addition to its chocolate bars, Hershey makes cocoa, chocolate syrup for soda fountains and housewives, chocolate kisses, and a new cocoa-milk bottled beverage recently introduced with gratifying results. The company has been using its cash surplus to buy up its preferred, and with no funded debt and no outstanding bank loans occupies an almost ideal financial position. Hershey common sold early in June at slightly over $100,at about thirteen times 1929 earnings and with a dividend return ($5.00) of about 4.7 per cent.

Mighty Mates for Leviathan, New Cabin Ships, A Yacht

CONTRACTS have been let for the biggest boats ever to be built in American yards.

When the startling Mr. Paul W. Chapman bought the United States Lines from the government, he agreed to promote an elaborate building program, to provide the mighty *Leviathan* with mighty mates. This he has begun to do after considerable delay prompted by foreign objections and domestic red tape. In 1932 the ways of the New York Shipbuilding Co. plant at Camden, New Jersey, will smoke with the friction of two 30,000 ton liners, 700 feet long, accommodating 1,300 passengers in first, tourist, and third class cabins (the United States Lines have abolished the bourgeois second cabin). Shortly thereafter the steely hulks will be embellished with Jacobean drawing-rooms, tile pools, gymnasiums, wireless telephones for ship-to-shore palaver, all the happiest devices of ship chandlery. The vessels have been designed to make twenty knots and will have two funnels, both real (the *Leviathan's* third funnel is for symmetry, not smoke). Floated at a total cost of $21,000,000, they will join the *Leviathan* on the New York to Southampton run until such time as two larger ships are built, when they will be transferred to the New York-Hamburg route.

Still more interest attaches to this second projected pair, as yet monstrous phantoms, which will cost more apiece than both their predecessors together. The United States Lines intends them to be the largest common carriers in the world, fleeter than the *Bremen* and *Europa*.

These momentous shipyard gestations are symbolic of the fecund healthiness which is now to be observed in all American maritime affairs, in direct contrast to the lean and dour aspect of many landlubbers' concerns. A bulletin issued by the United States Shipping Board proclaims that the American merchant marine now numbers some 700 ships of 4,000,000 gross tons directed by 83 companies to 75 domestic and 400 foreign ports as against only 20 lines and 112 ships of 600,000 gross tons in 1914. This growth is generously abetted by the United States Shipping Board which, by the Jones-White act of 1928, is empowered to lend steamship companies three-fourths of the cost of ships built and has to date loaned $93,000,000.

New & Electrified

The first low rate cabin accommodations on the Pacific were offered when the new *Hikawa Maru* of the Nippon Yusen Kaisha Line came Dieseling into Seattle. First of three motorships projected by the Japanese Company, *Hikawa Maru* is 535 feet long, 11,600 gross tons. She has thirty-four staterooms in the cabin class and provision for sixty-nine persons in the tourist cabin. She is completely electrified, from radiators to hoisting machinery . . . Far grander cabin ship is the French Line's *Lafayette* which recently ran its maiden voyage in the New York-Havre service. Registered at 22,000 gross tons, 615 feet long, she invites 591 first class, 334 tourist, and 142 third class passengers with decorations as sleekly contemporary as those of the *Ile de France*. In the degree of electrification she rivals the *Hikawa Maru*.

Yacht

Off Rockland, Maine, are watery wastes wherein innumerable new-built American ships receive their nautical initiations. Last month J. P. Morgan's fourth *Corsair*, bigger and better than the others but, like them, black-hulled and of extreme grace, raced over the course with the rakish, forbidding *Chester*, the Navy's newest cruiser. The *Corsair* proceeded at eighteen and one-half knots, and the *Chester* went twice as fast. But this did not dismay Mr. Morgan, who posted himself, smiling and wind-whipped, on the commodious new bridge which serves to establish him again as the dean of American yachtsmen.

"To Nowhere"

The season's award for originality almost went to National Tours of New York, which chartered three 23,500 ton Cunarders, each for an ocean cruise "to Nowhere." The vessels were to put to sea from New York, plough long arcs in the Atlantic, turn about in mid-ocean, and return again to New York after six and one-half days of sailing. Objections were immediate; the American Steamship Owners' Association declared the procedure violated the spirit of the coastwise laws; shipping men hazarded a guess that the ships would be tantamount to floating saloons, sottish, unruly, yet protected by the law. According to present plans, therefore, the *California*, *Caledonia* and *Transylvania* will each put in at Halifax, which the Cunard Line characterizes as "an added attraction." Other inducements are a Vagabond Orchestra and Gondolier Sextette, both managed by Rudy Vallée.

Long Pipe, Texas to Indianapolis

BRIGHT spot in a poor steel spring were the many pipe line orders received from natural gas and from petroleum companies. Pipe for a new world's longest natural gas line was ordered by the Missouri-Kansas Pipe Line Co.; Phillips Petroleum ordered from Republic Steel 100,000,000 pounds of pipe for an 800 mile line transporting gasoline (not crude oil), and Standard of New Jersey combined with Standard of Ohio to build a 300 mile line for the transportation of crude petroleum.

The Missouri-Kansas Pipe Line Co. line will extend from the Texas Panhandle to Indianapolis or more than 500 miles longer than the previous longest transmission system (the Insull-Doherty line from Amarillo, Texas, to Chicago). Like the Amarillo line and like the projected Columbia Gas & Electric line from West Virginia to the Atlantic Coast (see page 80), the Missouri pipe line illustrates the rapid expansion of natural gas companies and the current long-distance development in the industry.

The Phillips Petroleum Corporation line, running from Texas to Kansas City and to St. Louis, is unusual in that it will transport gasoline. Most existing oil company transmission systems take the crude oil across country to refineries, but Phillips believes transportation of the finished gasoline product will result in a large distribution savings.

Utility Business Forecast for 1932

OF GREAT interest to utility men were the estimates released at the N. E. L. A. convention by the directors of The American Superpower Corp. in connection with the 1930 American Superpower Award (see page 90). From companies* with which the directors are individually associated were obtained figures of operating subsidiaries (representing, in kilowatt hours sold, about 30 per cent of the electric light and power industry), reviewing performances for electrical operations only over the last five years, and estimating results through 1932. All data pertaining to sales of electricity to street railway departments and to other utilities, including street railways, were eliminated. FORTUNE here prints composite figures for 1926, 1929, and 1932:

MAXIMUM DEMAND IN KW

1926	4,723,530
1929	5,933,401
1932 (Est.)	7,419,300

ELECTRIC SALES IN KWH

	Residential and Commercial	
1926	3,224,726,625	
1929	4,546,271,811	
1932 (*Est.*)	6,109,650,541	
	Power	*Total*
1926	13,263,626,605	16,488,353,230
1929	17,647,314,842	22,193,586,653
1932 (*Est.*)	21,672,210,291	27,780,860,832

NUMBER OF CUSTOMERS AT END OF YEAR

	Residential and Commercial	
1926	4,289,924	
1929	5,176,612	
1932 (*Est.*)	5,864,805	
	Power	*Total*
1926	186,312	4,476,236
1929	252,862	5,429,474
1932 (*Est.*)	320,429	6,185,234

GROSS REVENUE

	Residential and Commercial	
1926	$189,176,032	
1929	255,987,178	
1932 (*Est.*)	319,604,550	
	Power	*Total*
1926	$182,538,720	$371,714,752
1929	235,556,915	491,544,093
1932 (*Est.*)	286,759,620	606,364,170

GROSS INCOME (*After operating expenses*)

1926	$221,287,312
1929	310,268,462
1932 (*Est.*)	388,593,674

*American Electric Power Co., American Gas and Electric Co., American Power & Light Co., Commonwealth & Southern Corp., Electric Power & Light Corp., National Power & Light Corp., Niagara Hudson Power Corp., Public Service Corporation of New Jersey, The United Gas Improvement Co.

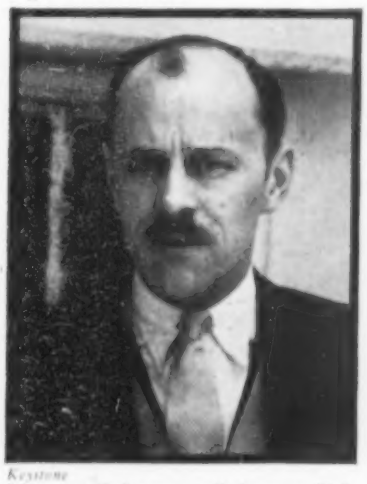
From Dictator to Director:

U. & U.

The John Hays Hammonds Sr. and Jr. are preëminent among father-and-son combinations. Hammond Sr., who began with African gold mines, now heads a promotion group (which includes the Fisher brothers) that lately bought control of Atlantic-Pacific Oil Exploration Co., which explores and exploits new fields in Wyoming and Montana. Hammond Jr. recently announced the latest of his radio inventions: an "eye" for fog-bound airmen.

P. & A.

International attention has been focused on Signor Mussolini's recent speaking tour, the first in several years. Business leaders in the United States were especially intrigued by this observation: "Italian workers! If anybody should tell you that elsewhere, beyond our frontiers, there is a reign of abundance, he would be a liar, and knowingly a liar."



Keystone

Morgan Belmont, of August Belmont & Co., who restores the financial fame of "Belmont" with his $1,000,000,000 group banking project.

The election of Hunter S. Marston, president of Bancamerica-Blair, to the board of General Foods, clinches Bancamerica's recently acquired interest in the company.

International

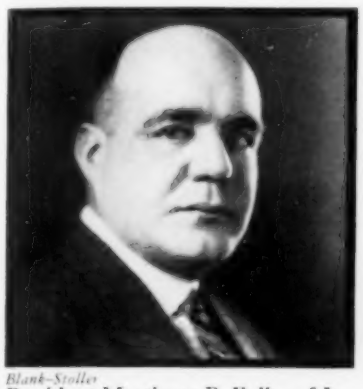
The late Brigadier General Herbert M. Lord (left) guarded the national budget from 1922-29. He was the true expression of Coolidge economy. The late Daniel M. Lord, who died at eighty-five, saw advertising develop from its babyhood. The firm he founded (now Lord & Thomas and Logan) is said to spend more than $40,000,000 annually for American Tobacco, Pepsodent (Amos 'n' Andy), and other products.

Adolph Zukor's home town, tiny Ricse, in Hungary, honored him on his recent visit with a fulsome speech by the mayor, a triumphal arch, much begging. "There is obviously no more illiteracy in Ricse," drily remarked Mr. Zukor of Paramount, on his return, "since everybody must by this time have sent a petition to me."

International

Prince Iyesato Tokugawa, ranking noble of Japan, was last in America as chief Japanese delegate to the 1921 Washington Conference. This June he returns in another rôle: as a loyal Rotarian, to attend the meeting in Chicago of Rotary International. He will go on to Canada (where is his beloved son) and Europe.

Faces of the Month



Blank–Stoller

President Mortimer B. Fuller of International Salt has had the pleasure of seeing his company's stock rise from 69 to over 150 within the year. International's prosperity (reflected in increased dividends, a stock split-up) was long unsuspected.

U. & U.

Back home in Baltimore from his world flight, Van Lear Black is once more devoting himself to the paper he publishes: the famed, respected Baltimore *Sun*. "The flying publisher" has covered some 130,000 miles in his trimotored Fokker monoplane.

Keystone

At seventy-four, Sir Herbert Samuel Holt, Canada's great railroad-utility-banking power, prepares to put Canada's steel industry on its feet by a sweeping reorganization of British Empire Steel Corp. His interests bought control in 1928.

International

"Perhaps you will be shocked, but I believe in trade unions," recently declared Mrs. Franklin D. Roosevelt, wife of the Governor of New York. She would solve the servant problem by forming servants' unions with which housewives could deal.

Keystone

When the very young U. S. Electric Power Corp. revealed, in its first annual report, assets of $1,221,500,000, everyone was surprised except Louis H. Seagrave. Chairman of U. S. Electric and president of American Founders, he is a little-known utility potentate of the first magnitude.

U. & U.

Col. William C. Procter, head of Procter & Gamble (Ivory Soap), has had a busy month: 5,000 artists entered works in this year's Ivory soap sculpture contest; his company has opened a new $5,000,000 plant in Baltimore and has bought (for a reported $8,000,000) Kirk & Co., Chicago soap-makers.

The box office hit of the month and of many months is the movie version of *All Quiet on the Western Front*. One week not long ago it grossed $22,800 in a Manhattan theatre, about double the average in New York. It is making money for Carl Laemmle, Universal Pictures head, who bought the film rights and who spent close to $1,000,000 on the production. And it is making a reputation for its director, Lewis Milestone (above), a chubby, witty Russian hitherto noted chiefly for his deft handling of sophisticated comedy. An ambulance unit went "on location" (a few miles from Hollywood) with the actors and proved handy when Director Milestone himself was knocked unconscious by a bit of flying plaster.

Ceres, goddess of grain (above, right), perches atop Chicago's new $12,000,000 Board of Trade Building (above, left). A modernistic Ceres it is, that stands forty feet high and weighs, though molded in aluminum, fifteen tons. Far under her feet, in a big room (113 by 163 feet) on the fourth floor, hums, throbs, roars the world's greatest grain market. In its eighty-two years of existence the Board of Trade has had twelve different homes. John Alexander Bunnell (left) is now president of the board.

U. & U.
FLOYD LESLIE CARLISLE

Pirie MacDonald
JAMES COX BRADY

Blank-Stoller
FELIX M. WARBURG

U. & U.
PAUL M. WARBURG

THE CHRYSLERS: WALTER, BERNICE, WALTER JR., MRS. CHRYSLER

U. & U.
MR. AND MRS. S. PARKER GILBERT

Wide World
WILLIAM SHATOV

Career Milestones

¶ *Floyd Leslie Carlisle, born March 5, 1881, in Watertown, New York; now of Manhattan and Great Neck.*—Mr. Carlisle will never forget the day he dislocated his leg while he was yachting and grimly directed some friends, who finally set the bone. Nor will he forget his recent election to the directorate of New York Edison, Consolidated Gas, and United Corporation, all in the same week. The first two dominate Metropolitan New York; United is the great Morgan holding company, and Mr. Carlisle is the head of Niagara Hudson Co. Thus in his person upper and lower New York State power has finally found connection, and the importance of Mr. Carlisle becomes national. Of the Utility Great he must be placed beside Sydney Z. Mitchell, Samuel Insull, and a very few others.

¶ *James Cox Brady, born July 28, 1907, in Monmouth Beach, New Jersey; now of New York and Gladstone, New Jersey.*—The only son of the late James Cox Brady and now the head of his family, James Cox Brady has been elected a director of New York Edison to represent his family and its large interests therein. Only twenty-three, at the directors' table he will sit with such men as Matthew Sloan, Floyd Carlisle, George F. Baker, Percy Rockefeller, George Cortelyou.

¶ *Felix M. Warburg, born January 14, 1871, in Hamburg, Germany; now of Manhattan and Hartsdale, N. Y.*—Perhaps the country's foremost lay Zionist, Felix Warburg, of Kuhn, Loeb & Co., was given in New York a dinner testimonial to his civic leadership and philanthropy. President Hoover, Mr. Coolidge, Bishop Manning sent tributes. Patrick Cardinal Hayes, Archbishop of New York, said: "A lively sense of the responsibilities and privileges of American citizenship, a staunch belief in the abiding mercy of God and a deep appreciation of the stewardship of God's gifts to man, and an intellect gifted with far-reaching vision of the needs of the community, together with splendid resourcefulness in marshaling the resources of the community to meet these needs—here is the basis of leadership that will command the respect and affection of all. Such leadership has Felix M. Warburg given to us, citizens of New York."

¶ *Paul Moritz Warburg, born August 10, 1868, in Hamburg, Germany; now of Manhattan and Hartsdale, New York.*—Brilliant banker and recently the author of an exhaustive study of the Federal Reserve System, Paul Warburg, brother of Felix, last month witnessed in Manhattan the opening in Wall Street of the new building of his Bank of Manhattan.

¶ *Walter Percy Chrysler, born April 2, 1875, in Wamego, Kansas; now of New York and Great Neck, and Bernice, his daughter, Walter Jr., and Mrs. Chrysler.*—One-time grocery clerk, then machinist, Mr. Chrysler last month saw opened in Manhattan his Chrysler Building, tallest building in the world, a splendid glittering tribute to a fortune made in automobiles. His daughter, Bernice, has equal cause for remembering this year, since in January she married Mr. Edgar W. Garbisch. Walter P. Chrysler Jr., Dartmouth freshman, this year distinguished himself by issuing with some friends the most luxurious U. S. college publication, *The Five Arts* ($5.00 for the first three issues).

¶ *Seymour Parker Gilbert, born October 13, 1892, in Bloomfield, New Jersey; now of Bloomfield.*—In 1921 Mr. Gilbert, when he was only twenty-nine, was given by Mr. Mellon the specially-created position of Under-secretary of the Treasury. Since then he has constantly been hailed as one of the country's brightest young men. He returns to America now, having achieved international fame as Agent General for Reparations Payments under the Dawes Plan.

¶ *William Shatov, born sometime, somewhere, in Russia; now of Leningrad.*—Agitator, anarchist, William ("Wild Bill") Shatov passed a turbulent early life in Chicago. He returned to his native Russia when the Revolution was declared. His and Soviet Russia's greatest industrial feat was the completion of the Turkestan-Siberian Railroad (the Turk-Sib) a year ahead of schedule. Costing nearly $100,000,000, Turk-Sib's 1,475 miles of track are of incalculable importance to Russia.

GREATEST ORCHESTRA, GREATEST CONDUCTOR, THE ARTISTIC NEWS OF THE YEAR

Toscanini Leads an American Enterprise to Triumph and a Deficit

WHEN the Philharmonic left New York in April, it was rather slightingly said that its tour could in no way be counted an American enterprise. Conductor Arturo Toscanini is an Italian. He plays no American music in Manhattan, intended to play none in Europe. A census of his men had been inspired by President Hoover after a winter concert in Washington. Instead of the usual effusive congratulations Mr. Hoover asked Toscanini how many of his players were Americans. The conductor, surprised, admitted he did not know; it developed that of the 114 players, only thirty were born in the United States. Twenty-nine came from Russia, thirteen from Italy, ten from Germany, and the rest from everywhere.

But those who denied the Philharmonic its nationality overlooked a most important factor: the money needed to support such an orchestra. Despite sold-out houses at every concert, the annual deficit is a big one. Uncomplainingly the directors meet it, pay the highest conductor's salary in the world for the services of the greatest conductor. Their generosity made the European tour possible, for even with houses packed all along the way the loss ran upwards of $250,000. There was a pay roll of some $17,000 to be met each week. Steamship tickets alone cost $38,000. (The men paid for the transportation of thirty-eight wives and nine children.) There were 250 trunks, five for the tympani alone and four for music; 8,000 pounds of instruments insured at $146,000.

When the players arrived in Paris they were perfectly prepared with their Beethoven, Brahms, and Wagner; but they were not prepared for their reception. It surpassed the wildest expectations. There were cheers which shook the Opéra for twenty minutes after each number, press notices which unreservedly proclaimed the orchestra the greatest in the world, Toscanini the greatest conductor. Then began the triumphal tour. Vienna and Berlin also have famed Philharmonics, but the critics gave unhesitating preference to the visitors. For Toscanini their admiration was unbounded. And they singled out for particular praise such outstanding individuals as Concert Master Sapione Guidi; 'Cellist Alfred Wallenstein, fifth grand nephew of Hero W. von Wallenstein of the Thirty Years' War, who came from the Chicago Symphony at Toscanini's personal request; Violist René Pollan, whose playing is as distinguished as the great red beard which spreads proudly over his shirt front; Tympanist Saul Goodman, sleek young Brooklyn Jew who might have become a doctor and thus have deprived the orchestra of a magnificent drummer; Harpist Steffy Goldner, the only woman in the band.

The men considered that they gave their best performances in Paris and Leipzig. It makes little difference; everywhere enthusiasm ran riot. Kings and queens paid homage with the rest. The tour ended in London with Dame Nellie Melba leading the cheering at the farewell concert. A fitting postscript was a reception given Toscanini and his colleagues by Chairman Clarence Hungerford Mackay of the Philharmonic board of directors. Other directors, notably President Harry Harkness Flagler and an outsider, John Davison Rockefeller Jr., subscribed generously to the tour. But the enterprise was chiefly Chairman Mackay's, his the outstanding contribution.

MUSICAL MANAGER ARTHUR JUDSON

BOARD OF THE PHILHARMONIC

Few industrial corporations rejoice in a supply of directors more abundant than is vouchsafed the Philharmonic-Symphony Society of New York. The Philharmonic's board of twenty-five could be analyzed, thus:

Chairman Mackay (*silver and telegraph*), chief support.

Arthur Judson, chief U. S. manager of musical enterprises, including two orchestras (Philharmonic and Philadelphia), five smaller ensembles, the American Opera Company, and nearly fifty individual artists (Heifetz, Zimbalist, Martinelli, Iturbi, Horowitz, etc.).

Eight active, effective officer-directors: Harry Harkness Flagler (*oil* and *Florida*); Frederic A. Juilliard (*textiles*); Otto H. Kahn (*banking*); Marshall Field (*department store*); Paul D. Cravath (*law*); Henry Seligman (*banking*); Charles Triller (*bakers' supplies*); Richard W. G. Welling (*law*).

Sixteen interested, but not extraordinarily active directors, who attend meetings once or twice a year: Mrs. Vincent Astor, Nicholas Murray Butler, John W. Davis, Norman H. Davis, Anselme Fortier, Scipione Guidi, Mrs. E. H. Harriman, Frank L. Polk, Walter W. Price, Edwin T. Rice, Elihu Root, Charles H. Sabin, Nelson S. Spencer, Henry W. Taft, Maurice Van Praag, Felix M. Warburg.

HIS (CLARENCE H. MACKAY'S) THE CHIEF CONTRIBUTION

This Month's Issue of Fortune

Is subjected to comment from the stock market angle.

(By Carlton A. Shively of The New York Sun)

VARIOUS groups of utilities, representing this, that, or the other "interest," such as Bonbrights, the Koppers (Mellons), Electric Bond & Share, Laderberg, Thalman, Schoellkopf, Carlisle, Associated Gas, Cities Service, have at various times held the center of the Wall Street stage. Usually the Electric Bond & Share group has been the acknowledged pace setter, and it is still in the race. But a new group is rapidly coming to the fore—the Morgan companies controlled by United Corporation.

United is selling comparatively cheaper than its constituent companies. It is valued in the market for less than its real liquidating worth at market prices of the stocks which it holds. The reason is that every time it makes an offer for additional U.G.I. or Columbia Gas stock or buys more of them or of Consolidated Gas in the open market, the floating supply of those stocks diminishes. Holders think of approaching "scarcity" value and say to themselves that another and perhaps more attractive exchange offer will be made later. Perhaps they are right but, in the long run, of course, the gravy will be found in the holding company, into which all revenues flow and which can make up in one direction what it may lose in another.

. . .

UNTIL last year when a Wall Street man was asked his opinion of the "coppers," he immediately thought of American Smelting and Refining. "Smelters" and the Guggenheims have been synonyms for the copper industry and the copper shares since time immemorial in Wall Street. Last year the position changed somewhat. John W. Ryan, head, heart, and soul of the great Anaconda group of mines and fabricating plants and Charles E. Mitchell, who runs what was then the biggest bank in the country, began to do things with Anaconda and the great bull market in the stock, which sent the price to a high of 174⅞, helped carry other coppers forward.

Anaconda's gain from the early price of the year was almost 50 per cent. That of the second largest producing unit in the industry, Kennecott, was more than 70 per cent. The long climb in Anaconda, Kennecott, and numerous other copper shares absorbed the speculating public's interest, to the neglect of the old time group leader, Smelters. For copper metal prices were moving up from twelve cents a pound to double that figure.

In all this hullabaloo Smelters was comparatively neglected. The company produces a large amount of copper and other base metals, but its principal profits come from refining. The big money last year, or so it seemed, was for the producers, which were operating at capacity and cleaning up. They all raised their dividends. Smelters stood pat. The stock went up, it is true, but less than the general market, the rise being from 97⅝ to 130¼, or only about 33 per cent.

If coppers were the market leaders of the spring of 1929, they were the tail-enders of the early months of this year. Dividend reductions have been general and market prices have melted to the lowest quotations in several years. Copper shares have been selling to yield from 8 to 15 per cent. Only two or three large companies are holding to their old dividend rates. American Smelters is one of them, paying $4.00 annually and selling currently to yield between 5 and 6 per cent, a yield which does not indicate much stock market apprehension of a lower rate. Smelters is resuming its old leadership in the copper group.

. . .

RAILWAY equipment stocks are losing their high standing in financial society. The evidence is not only in the stock market record, which may be written to suit the whims of any powerful operator. It can be found also in the investment ratings granted by the statistical services, which are law for a large body of investors.

Three years ago the excellent deportment of such companies as American Car and Foundry and Pullman had earned them an "A" on their report card. Baldwin Locomotive was bringing home a "B" pretty regularly. An "A" is awarded to stocks in the investment group with sound position and stability. The "B" grade is three steps down, showing expectation of regular dividends and moderate progress.

In 1928 Pullman was reduced one rung, to "BAA," where it has remained. In 1929, American Car and Foundry joined that class. This year A.C.F. dropped an "A," standing now at "BA." Baldwin chugs along with a "B," which happens also to be its symbol on the stock ticker.

Of the three, Pullman deservedly has the highest rating. It has rolled along steadily in the market since reorganization of its corporate structure, involving segregation of manufacturing and operating activities in 1927, showing a maximum range between 73 and 99¼. Its dividend record begins in 1874, the current rate being $4.00. As a holding company, Pullman derives its income from transportation as well as from equipment manufacturing, and there is no sign that Pullman passenger hauling is dying with railroad coach traffic. Gross revenues from this source were $1,500,000 higher last year than in 1928, reaching the second highest point in the company's history.

That there is compensation in sight, even for lost traffic, is indicated by David A. Crawford in his annual report. The older, less favorable car service contracts made with important railroads a decade or more ago, when operating costs were much smaller than they are now, are expiring. Pullman hopes, even expects, that new contracts can be made on a more favorable basis. Beyond this help there remains the possibility of legislating out of existence the railroad surcharge on Pullman tickets.

. . .

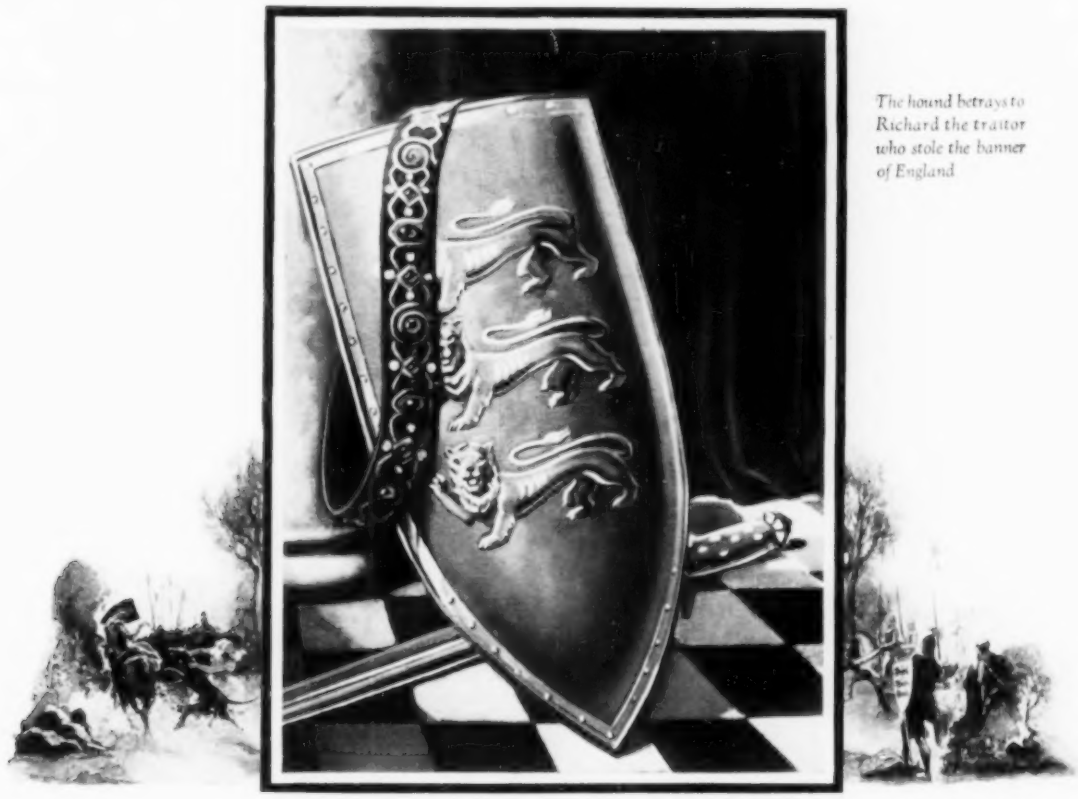
THE market fall of American Car and Foundry dates from 1925, when the record price of 115¾ (equivalent to 231½ on the old stock, split two for one) was set. Fluctuations were narrow in succeeding years, but the mean worked slowly lower. From a low of 75 last autumn, the stock reached a high of 82½ this year.

A yield of more than 11 per cent on the stock at its price on the date of the last dividend declaration showed Wall Street's idea of the permanence of the $6.00 rate. In spite of the diversification of products already undertaken, William H. Woodin apparently has not discovered yet what course the largest equipment manufacturer in the world is to lay.

. . .

BALDWIN Locomotive last year changed from a rich man's stock to a poor man's gamble. The Fisher Brothers' buying campaign in 1927 and 1928, carrying the stock almost to $300 a share, was embarrassing, to say the least, to the shorts who knew earnings and thought they knew the market. Somebody must have laughed bitterly in 1929, when the stock crashed from a high of 271 to a low point of 60 (actually $15 a share on the new stock resulting from the four-for-one split).

Although four or five years ago the equipments were well recommended by investment counselors, a tally of investment trust holdings shows A.C.F. and Westinghouse Air Brake appearing only three times, American Brake Shoe four, Pullman and General Railway Signal eight, and General American Tank Car twelve in a list of more than 75 portfolios. Baldwin is missing.



The hound betrays to Richard the traitor who stole the banner of England

Shield of Richard. Painted by Ludwig Gassner

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Electric Light & Power: 1920-1930

[*Continued from page 104*]

small companies under merger, the replacement of other securities with lower priced money, in addition to the regular maturities. Summarizing, the annual investment increment has been $500,000,000 per year for the first five years, and $640,000,000 per year for the remainder of the period under discussion.

About a quarter of the money involved in expansion and refinancing of the electric light and power industry in the past ten years has come from the company sales of stock, both common and preferred. Not many companies have offered common stock, except those having but one stock classification, however. The recognition by the investor of the stability and essential character of the industry applies not only to the individual buyer of securities, but many organizations have taken large pieces. Insurance companies have invested millions; educational institutions are using power and light securities for endowment purposes; and now that savings banks are being given an opportunity to invest in them the demand is large and new money costs relatively much less than ten years ago.

The curve at the top of the sheet, Figure V, gives the average yield of power and light securities marketed by investment houses for the past ten years. The figures for 1920-24 are the weighted average of all power and light securities handled by these institutions, based upon the amount of issue, the rate, and the selling price. The figures are: 1920—7.7 per cent; 1921—7.3 per cent; 1922—6.24 per cent; 1923—6.34 per cent; and 1924—6.23 per cent. There has been a gradual decrease since January, 1925, so that the average yield for 1925-29 has been between $5\frac{1}{2}$ per cent and $5\frac{3}{4}$ per cent.

Figure VI is presented. Gross revenue for 1929 was $2,150,000,000. In 1920 it was $882,750,000. The increase of $1,267,250,000 accompanied an added investment of $5,700,000,000. The ratio of added investment to increase in annual revenue of 4.5 is quite satisfactory when compared with a total investment and total revenue ratio of 4.9 for 1918, 4.65 for 1920, and 4.55 at the end of 1929. And this accompanies a decrease from 3.03 cents per KWH in 1920 to 2.79 cents in 1929 for all energy sold by power and light companies in the United States. It means a power bill of $185,000,000 less for 1929 than would have been required under the average rate of 1920, an amount sufficient to pay the interest on $3,000,000,000.

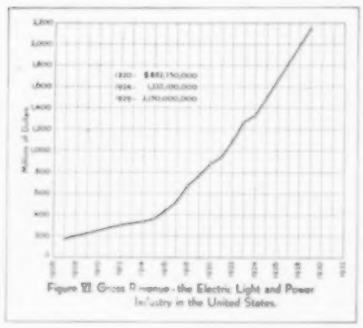


Figure VI. Gross Revenue - the Electric Light and Power Industry in the United States.

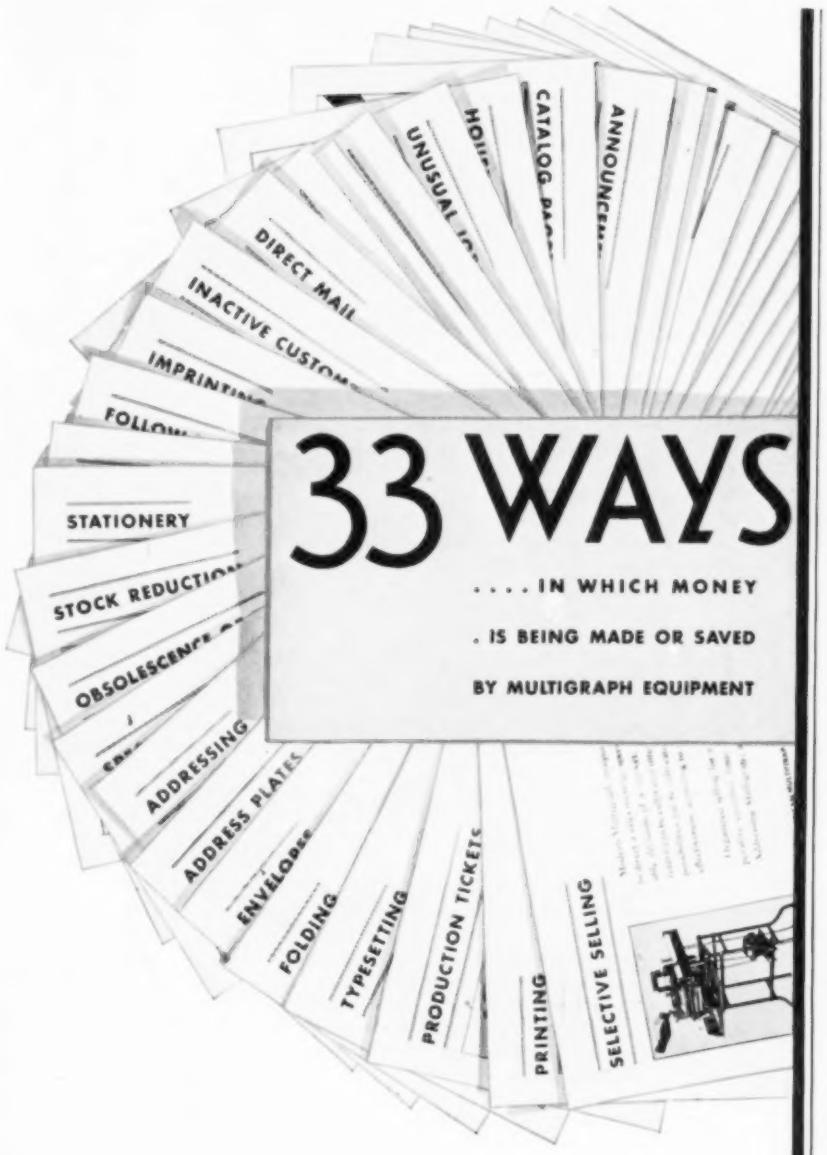
In this connection it is interesting to note that according to the U. S. Bureau of Labor index of the cost of living, retail electricity is the only commodity that is below and has continuously remained below the 1913 level since that date. And this condition has existed while all other commodity classifications have been from 30 per cent to 185 per cent above the 1913 base during the 1920-30 decade.

Operating ratios have shown little change over the period. Slightly less than 50 per cent in 1920 for the entire country, a gradual increase to $52\frac{1}{2}$ per cent in 1924 was recorded. Since then the figure has at times gone several per cent below 50 but the ten-year average is close to 50 per cent. This compared with the added investment, increased gross revenue ratio, is one index of the stability and financial soundness of the industry. The net income ratio has therefore remained fairly constant through 1920-29. With judicious commission regulation, about the only changing influence upon this at any time can be a raising or lowering of the price of money.

The aspect of the power and light industry on the whole is one of a vast beneficial agency, selling its product lower than that of other comparable services, well managed, soundly financed, and presenting a conservative and stable offering to the investor.

Public ownership, regulation, and public relations

Public ownership of utilities, a live issue in many political campaigns during the past decade, has perhaps been discussed more than during any other ten years of our history. It found little support during the presidential campaign of 1924. California and Washington went on record with decisive rejection of public ownership bills, and Chicago voters defeated the proposal for municipally owned surface and elevated lines. On the other hand, Detroit early in the decade purchased her street railway system and has operated it for about eight years. The advocates of public



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ownership point to government operation in other countries, to our own municipally owned water works systems, and to our municipal electric light and power utilities which are operating with varying degrees of efficiency and satisfaction. Private ownership supporters are those who are justified in their belief that the efficient business organization, such as that of the power and light companies, can best serve them and the country with the electric necessity. This discussion will not be a brief for either municipal or private ownership—there is but one way that the electric light and power industry could have developed and can develop in the future to render the service that it must continue to furnish, and that is not public ownership.

The number of municipally owned electric light and power plants has increased slightly in the past ten years, but the production is less than 5 per cent of the nation's total. Many old municipal systems have been purchased by companies who now supply continuous and reliable service. The new plants that have been built by cities are, as a rule, good engineering jobs, well operated, and take care of the needs of the community with fair satisfaction.

However, the best of the municipal systems, other than distribution works, do not and can not fit in with any interconnection of superpower plant. The operation of municipal electric light and power systems in a manner to promote national conservation of fuel and waterpower resources cannot in any way be compared to the satisfactory operation of municipal water utilities. The water utility is confined to one comparatively small community. Electric light and power lines extend over state boundaries.

Our national government's few business ventures have not proven particularly successful. Many of the state attempts to enter business have been more disastrous. It does not seem likely that public ownership of the electric light and power industry will be experimented with in a big way. Our present plan of customer ownership of stocks and bonds, with continued fair regulation by commissions, is going to remain intact.

The Interstate Commerce Act was passed in 1887. It has been amended at various times since. After 1906 the Interstate Commerce Commission had very wide regulatory powers. Perhaps there was too much regulation; however, unbiased students assert that governmental control of some roads was well deserved. That is not a matter for discussion here. The majority of the state bodies having more or less jurisdiction over steam railroads followed the Interstate Commerce Act of 1887.

The formation of agencies having regulatory power over the power and light industry has come about in the reverse order, first the state public utility commissions, and the national body, Federal Water Power Commission, not until 1920.

The Federal Water Power Commission exercises jurisdiction over a part of the power and light industry in that there are comprehended by the Act supervision of development, capitalization, rate making, and service to a certain degree, at all hydroelectric sites on lands of the United States and on navigable and international boundary streams. Jurisdiction over waterpower for any purpose whatsoever is included, but much the greater part of the development has been and will be by the power and light industry. Eighty-five per cent of all of the available waterpower of the nation is affected.

That a license of fifty years' duration and that the provisions of the Act are considered reasonable is indicated in a material way by the results of ten years' operation. In the first five years, plants with a total capacity of 597,000 horsepower were completed or under construction. Licenses for construction and preliminary permits had been issued up to 8,460,000 horsepower. In the second five years, additions to the country's central stations in plants completed and under construction exceed 2,500,000 horsepower.

The Water Power Act provides for state regulation either by the commission or by state agencies. The states have had the necessary regulating bodies and in most cases have exercised the regulating power over rates and service. There have been proposals in the last ten years tending toward some sort of national body with jurisdiction over the entire light and power industry. Need for federal regulation, other than that of the Federal Water Power Commission, does not exist. State regulation is now superior to any other kind. And home rule, so called, has not given and can not give the public and the utility the uniform judicial treatment that the state commissions generally have given and will give.

In 1923 all but eleven states had bodies with unqualified jurisdiction over the privately owned power and light industry. Included were valuation for rate making, rates, service, and, in most cases, capitalization. Four of the remaining states had limited jurisdiction, and seven had no state regulation whatsoever. The total production of electrical energy of the seven amounted to less than 4 per cent of that of the nation. The one with the largest production of the seven has now extended the powers of the commission which then existed to include the electric light and power industry.

Valuations and rates have been the most important of the state commissions' duties. Before the World War the problem of de-

termining an index of value was not the complex one that it became in the first half of the 1920-30 decade. Cost of reproduction based upon costs over a period of five or ten years was quite generally accepted as a starting point. Price changes seemed to upset that. In 1920 we were much at sea as to a proper price basis to be used for appraisal purposes. Engineers submitted estimates founded upon several sets of prices. Recommendations were made pro and con. But all came back to the historic Smyth vs. Ames case.

Mr. Justice Hughes in the Minnesota Rate Cases stated:

> "The basis of calculation is the 'fair value of the property, used for the convenience of the public.' (Smyth vs. Ames, 169, U. S. 546). Or, as it was put in San Diego Land & Town Co. vs. National City, 174, U. S. 757: 'What the company is entitled to demand, in order that it may have just compensation, is a fair return upon the reasonable value of the property at the time it is being used for the public.' . . . The ascertainment of that value is not controlled by artificial rules. It is not a matter of formulas, but there must be a reasonable judgment, having its basis in a proper consideration of all relevant facts."
>
> (Simpson vs. Shepard, 230, U. S. 434)

How should that value be determined? And also in the Minnesota Rate Cases:

> "As the company may not be protected in its actual investment, if the value of its property be plainly less, so the making of a just return for the use of the property involves the recognition of its fair value if it be more than its cost. The property is held in private ownership, and it is that property, and not the original cost of it, of which the owner may not be deprived without due process of law."

Then coming to the first decision after the War:

> "It is a matter of common knowledge," said the Supreme Court in the Lincoln Gas Case (250 U. S. 246), "that, owing principally to the World War, the costs of labor and supplies of every kind have greatly advanced since the ordinance was adopted, and largely since this case was heard in the court below."

On May 2, 1923, the Supreme Court stated in the Southwestern Bell Telephone Case (262 U. S. 276):

> "It is impossible to ascertain what will amount to a fair return upon properties devoted to public service, without giving consideration to the cost of labor, supplies, etc., at the time the investigation is made. An honest and intelligent forecast of probable future values, made upon a view of all the relevant circumstances, is essential. If the highly important element of present costs is wholly disregarded, such a forecast becomes impossible. Estimates for tomorrow can not ignore prices of today."

But Mr. Justice Brandeis, in the Georgia Railway and Power Case (262 U. S. 265), June 11, 1923, takes us back to the Minnesota Rate Cases and indirectly to Smyth vs. Ames:

> "The refusal of the Commission and of the lower court to hold that, for rate making purposes, the physical properties of a utility must be valued at the replacement cost less depreciation was clearly correct. As was said in Minnesota Rate Cases, the ascertainment of that value is not controlled by artificial rules. It is not a matter of formulas, but there must be a reasonable judgment having its basis in a proper consideration of all relevant facts."

These extracts from decisions of the highest court of the land are quoted to better present the problem before our public utility commissions at the beginning of the decade. Testimony before them has been conflicting as opinions will ever be. Readjustment of thought by the public, the commissions, and the companies to properly measure changed conditions was difficult. On the whole one cannot be other than impressed by the fact that "reasonable judgment" has been exercised.

There were many appeals early in the decade. As business conditions gradually became more stable and a somewhat firmer price level established, these appeals have not been numerous. The tendency in fixing value now is to give considerable weight to current prices. It appears that there is hardly an alternative when such a large share, around 70 per cent, of the investment in the power and light industry represents construction since the War-time high price period began.

It has taken years to clear up confusion that resulted from a misapplication of the term depreciation. Primarily depreciation means loss of value. The word has been applied to the allowance for replacement or renewal as used in accounting and to loss of service life as used in engineering practice. Neither of the two usages of the term necessarily implies loss of value.

The longevity theory is being rejected as a measure of value of public utility property. The property is a continuing thing. It was never built to remain new, but to give

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Modern Accountancy inspires and develops Resourcefulness in men. With its enlightened application of facts and figures, its Budget, its System, Method and Order, it *makes men see* the possibilities which lie in their world of undeveloped resources.

ERNST & ERNST

ACCOUNTANTS AND AUDITORS
SYSTEM SERVICE

AKRON	GRAND RAPIDS	PORTLAND, ME.
ATLANTA	HARTFORD	PROVIDENCE
BALTIMORE	HOUSTON	READING
BIRMINGHAM	HUNTINGTON, W. VA.	RICHMOND
BOSTON	INDIANAPOLIS	ROCHESTER
BUFFALO	JACKSON, MISS.	ST. LOUIS
CANTON	KALAMAZOO	ST. PAUL
CHICAGO	KANSAS CITY	SAN ANTONIO
CINCINNATI	LOS ANGELES	SAN FRANCISCO
CLEVELAND	LOUISVILLE	SEATTLE
COLUMBUS	MEMPHIS	TAMPA
DALLAS	MIAMI	TOLEDO
DAVENPORT	MILWAUKEE	TULSA
DAYTON	MINNEAPOLIS	WACO
DENVER	NEW ORLEANS	WASHINGTON
DETROIT	NEW YORK	WHEELING
ERIE	OMAHA	WILMINGTON, DEL.
FORT WAYNE	PHILADELPHIA	WINSTON-SALEM
FORT WORTH	PITTSBURGH	YOUNGSTOWN

service, and as long as it gives 100 per cent service its value remains intact. In one of the best discussions of the subject, Mr. Justice Moody said in 1909 (Knoxville vs. Knoxville Water Co. 212 U. S.):

> "It (the company) is entitled to see that from earnings the value of the property is kept unimpaired . . ."

Even so, some of the so-called public utility experts have vigorously supported the idea that age and loss of value are almost directly proportional.

Fortunately our commissions and courts, in the past five years more than ever before, have held that only in the case of inadequacy of maintenance and replacements is there loss of value and that such loss of value is measured by the expenditure in money that would be necessary to restore the property to a normal operating efficiency.

Our commissions and courts have had difficult problems in the consideration of valuations and rates. These have been handled with judicial fairness. The regulating bodies are to be commended for their assistance in making available to the public a beneficial service such as that of the electric light and power industry.

Interconnection and superpower

Early in the decade, when the first 220,000 volt transmission line had proven successful in operation, predictions of transcontinental lines at this or higher voltages were common. As yet we haven't them. Perhaps they will not exist in the near future. The public's conception of superpower has included such an interconnection plan. It is true that we have the means at hand to bring mountain states hydroelectric energy to the upper Mississippi and Great Lakes industrial districts. Constant potential lines at 220,000 or 330,000 volts would do it. But the losses coupled with the great investment necessary for these lines have made it cheaper to haul fuel to our steam plants. Whether or not this course is the best for America's future only developments of that future can tell. Immediate utilization of all available waterpower and conservation of fuel seems better, but as a business project, under the conditions of the past decade and probably for some time yet, long line transmission, above 250 to 300 miles, is not economically justified.

Superpower developments of the past ten years have then not consisted of the building of huge mine mouth steam plants or out of the way waterpower stations with long transmission lines. Rather they have been the interconnection of independent systems, isolated plants, and the unification of districts or zones.

There has come about a closer coöperation between companies operating in adjoining territories, and many consolidations have been made. In 1924 alone, mergers took place in sufficient number to reduce the operating companies about 325. Compare this figure of one year with an average of about ninety per year from 1917 to 1922, as indicated by an analysis of figures of the U. S. Bureau of the Census. As the result of the coöperation and mergers and within the districts which are becoming superpower zones, many benefits are already evident. A better utilization of waterpower, particularly if on different water sheds, is being brought about; the load that could be carried on formerly separate systems has been increased by relatively diminishing peaks; operation is becoming possible with less reserve equipment; all of these tend toward a better capacity factor and conservation.

Superpower was no new thing to the power and light industry when it began to receive wide public attention some eight or ten years ago. Engineers and company executives had for years been making plans to that end. Many of the economies that could be realized were known. But it is safe to say that except in few sections had the construction programs been such as to accomplish much until the present decade.

The studies involved by such investigations as the Superpower Survey of the Washington-Boston District, a coöperative investigation between our national government and the utility companies of the region (incidentally the first introduction of superpower to the public); the Transmission Committee of the Empire State Gas and Electric Association; the Superpower Committee of the Pacific Northwest; Power Survey Committee of the Great Lakes Division, N. E. L. A.; Giant Power Survey of Pennsylvania; together with several comprehensive private investigations marked steps of utmost importance in a national power program. These took place in the first half of the decade. Up to 1925 but one study of the entire United States had been presented to the public. This, a personal contribution, dealt largely with the transmission problem.

Early in the second half of the decade the coördination of results of all district surveys up to that time and the formulation of a complete national plan was started. In this the National Electric Light Association has had the coöperation of the United States Government, state governments, its members, and such vitally interested industries as the electric railways, steam roads, and others. There is resulting a comprehensive power plan for America.

Most advantageous locations for large steam plants are pointed out. Order of development of waterpower is suggested. Standardization

The Book-Cadillac Hotel
DETROIT

Good night

This is a story about the cost of *sleep*, sweet and restful *sleep* at the Book-Cadillac Hotel. $3.00 is the lowest rate, and, there are 100 rooms at that price. There are a hundred more at $3.50 per day. There are nearly 250 others at $4.00 and 150 at $4.50 and more than 200 at $5.00. Beautiful sample rooms, light, airy, large and convenient range from $5.00 to $8.00. The balance of the 1200 rooms, single and en suite, range from $6.00 to $32.00 daily. So, note it in your memory: the great majority of our rooms are $3.00, $4.00 or $5.00 a day. ★★★★★ Five restaurants suit your need or whim or purse. Two are inexpensive; three are higher; both serve the same food prepared delightfully, appetizingly by world famous Garces, great Book-Cadillac Chef. ★★★★★ So, even though the food and the service and the beds are superlative, *prices are not high*, never have been, never will be. *Good night.* See you soon.

The Book-Cadillac Hotel
ON WASHINGTON BOULEVARD
THE STREET OF FINE SHOPS
DETROIT

CARL M. SNYDER — MANAGING DIRECTOR

A Personal Invitation to Hotel Hollenden

THE Hotel Hollenden is ideally located for the convenience of the visitor whether he is in Cleveland on business or pleasure. Within a block or two of the Hollenden will be found the leaders in practically every activity of the city. Just a block or two away are the theatres, the shopping centers, the banks, the Public Auditorium and the principal office buildings. Located right in the heart of things, the Hollenden has for decades served the requirements of the most discriminating visitors. Anything that is required of a good hotel may be found at the Hollenden. You are cordially invited to make the Hollenden your home when you are away from home. The Crystal Dining Room and the Hollenden Coffee Shop offer a variety of good eating places.

Sincerely yours,

Theo. DeWitt
Vice Pres. & Gen. Mgr.

In Cleveland-its The
HOLLENDEN
THEO. DE WITT,
Vice Pres. and Gen. Mgr.

HAMLEY KIT

Banishes Loops and Gadgets

INSIDE MEASUREMENTS
$ 6.00 size 8⅝ x 3⅞ x 1⅞
7.50 size 9½ x 4½ x 2¼
10.00 size 10½ x 5⅛ x 2¾
Name or initials embossed on lid, 25c extra.

Thousands adopting this new and better kit originated by Hamley

At last—a "travel-wise" toilet kit. A hand-made case of thick solid leather. No loops or gadgets or monkey-business! You just toss toilet articles in . . . that's all there is to it. Everything is together, ready for instant use.

The Hamley Kit is made of the same superb quality solid leather which made Hamley Cowboy Saddles famous. Oak bark tanned—a long, slow process which ripens leather fibres and makes them improve with age.* Natural russet color that takes on a rich dark glow with passing years.

At exclusive shops or postpaid direct from HAMLEY & COMPANY, *Saddlemakers since 1883*, 371 Court St., Pendleton, Ore.

*Be sure you get the genuine Hamley, with this mark tooled on bottom.

The **HAMLEY KIT**
MADE LIKE A FINE COWBOY SADDLE OF GENUINE *Solid Leather*

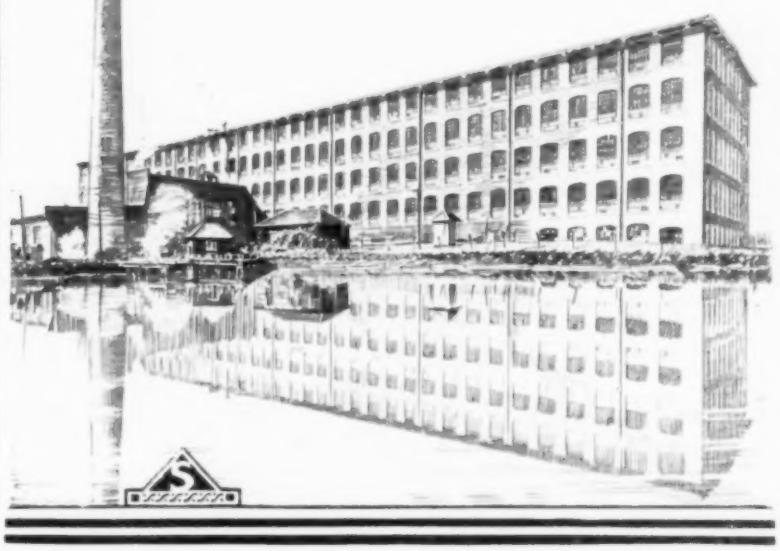
Reflected in Chiquola's Record — Modernization as a *fixed* Policy

IN the annals of the Textile Industry few cotton mills have achieved a sustained record of profitable operation more noteworthy than that of Chiquola Manufacturing Company at Honea Path, S. C.

The uninterrupted dividend record of this mill reflects a definite policy of keeping the mill constantly up-to-date in every feature:—equipment, power application, management, labor relations.

This organization of Engineers, in its early days nearly thirty years ago, planned, designed and supervised construction of this cotton mill. The intervening period has been a record of constant co-operation with its client in helping the plant to an ever new peak of productive efficiency.

J. E. SIRRINE & COMPANY
Engineers
Greenville South Carolina



WHAT IS NITROCELLULOSE?

The question above can not be more adequately answered here than by citing a few of the many purposes for which nitrocellulose is used. ¶ It is the base of modern lacquers for wood, metal, plaster, fabrics and other surfaces. These lacquers impart a remarkably tough, waterproof film that is highly resistant to scratching. They save millions for industry in time and storage space, because they dry so quickly. A lacquered surface is easy to wash and clean. ¶ Solutions of nitrocellulose are used to seal containers, to waterproof textiles, and to give them a silk-like sheen. They are powerful adhesives and are used to stiffen fabrics as in box-toes. ¶ New uses are constantly being discovered. Consult whoever supplies your finishing materials about lacquers. "The Story of Modern Lacquer" is a booklet that may suggest a profitable new use to you. Please write for a copy. >

CELLULOSE PRODUCTS DEPT.
HERCULES POWDER CO.
(INCORPORATED)
975 King Street, Wilmington, Delaware

Nitrocellulose | Explosives
Cotton Cellulose | Naval Stores

Landscape Work

Tree Surgery

Poison-Ivy Removed

By Hand—Not Acid

H. STANTON

Garden and Lawn Specialist

SOUTH HAMILTON, MASS.

Send for Circular and excellent endorsements

of voltages and frequencies is covered. On the whole, the study has as its object the formulation of a complete plan for maximum utilization of waterpower, conservation of fuel, economical use of electrical energy, and a reliable and constant power and light service at a low cost. But these items are not all. This work of comprehensive planning and coördination is justified in a prosperous nation like ours if for no other purpose than that of National Defense.

An attempt has been made by Figure VII to indicate regions of interconnection. Some are now largely interconnected within the section, but only a few equipped as yet for more than emergency transfer of power between districts. Upon the character of the loads of adjoining sections depends the justification for large capacity lines between them. If a lighting load in one can be balanced by an industrial load of another, then the interchange of power will make less generating equipment necessary and improve the load factors.

California was the first state to become largely interconnected, and it now has the highest capacity factor of any region, better than 50 per cent. The waterpower district of the South Atlantic States was a close second. The New England and Middle Atlantic sections are working out their part of the comprehensive plan. The industrial districts of the East North Central States have made good progress. A part of the West North Central section is well tied together, but municipal ownership in some parts of that section has handicapped its progress. Ultimately we shall have all power companies within a region or zone either consolidated or working as one unit in the production and distribution of electrical energy. That will be accompanied by contact points between the zones, in some cases for interchange of rather large quantities of power, but as a rule for emergency service only.

Superpower has its start; it is here. Its results are becoming tangible in dollars and cents and in a uniform and constant service. It calls upon the best talent of the branches of finance, engineering, commerce, public relations, and governmental coöperation for its highest development, most judicious control, and maximum service to maintain the standard of living, promote the prosperity, and insure the National Defense of America.

Figure VII. Diagram to Indicate Power and Light Interconnection Centers in the United States, 1930

You may be hooking, you may be slicing, your putting may be as erratic as a left-handed earthquake—but if you are playing the Silver King you can be dead certain it isn't the fault of the ball.

THE KING O' THEM ALL

This beautiful "Lincraft" Post-and-Rail Fence—11 ft. rails, 65 cents each; posts 95 cents and $1.00 each

Send for "The Book of Fences"

describing Lincraft Rustic Fences, as installed on some of America's most beautiful estates and suburban properties. The Lincraft Line includes Post-and-Rail, English Hurdle and Woven Fences, both hand and machine, sturdily constructed of seasoned, weather-resisting woods. A Lincraft Fence requires no painting, and age only adds to its beauty. It is economical in first cost, installation and up-keep.

LINCRAFT RUSTIC FENCES

NEW JERSEY FENCE COMPANY
34 LOGAN AVE. BURLINGTON, N. J.

JOHN HANCOCK SERIES

A Financial Leader

William V. Lindblom in the Magazine of Wall Street says . . .

that the stability and happiness of the home depends on the care with which the financial plan is worked out and followed.

Said this experienced adviser, there is but one way for a young man to provide for his family against premature death, that is, by life insurance. While no rule can be the same for all, said Mr. Lindblom, ten percent of annual earnings might well be laid aside in the average case.

Your life insurance program, therefore, is an important item in your life and that of your family. Let us talk this over with you, or write for our booklet, "This Matter of Success."

INQUIRY BUREAU

John Hancock
MUTUAL
LIFE INSURANCE COMPANY
OF BOSTON, MASSACHUSETTS

Fr.

Over Sixty-Seven Years in Business

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Callisthenes on Fortune

In The TIMES, (London) Selfridge & Co. publishes daily an editorial "Reflecting the policies, principles, and opinions of this House of Business upon various points of public interest". The Selfridge editorial for May 13, 1930, signed by Callisthenes, was headed *The Voice of Commerce.*

"FOR a long time commerce was without a voice of its own. Every now and again there would be someone outside, a statesman or a scholar, who would say fine, true, informative things about commerce and industry. But he would turn soon afterwards to other things and the old silence would fall upon the active economic life of the nation.

"This was a defect in the national life. It was not good that the nation should know so little about how things were produced and marketed. What is not heard about is often misunderstood and underestimated. There were signs that these faults could be noticed in the ordinary man's view of commerce and manufacture.

"It was also not good for business that it should have no effective organ of self-expression. Self-expression is a powerful aid to self-development. . . .

"We have often in this column expressed admiration for the English trade journals. At the moment we are thinking of a new American journal, 'Fortune.'

"How satisfying it is to see business pictured and expressed as it is in 'Fortune'! It has been designed, written, and illustrated by men who have refined and enriched their perceptions in commerce as the artist has in colour and form, as the musician has in sound.

"There is not a picture even among the advertisements which has not something of beauty in it. Nor is it the beauty of fake and elimination, but the beauty of accuracy and inclusion. There is an article on a paper company in which the pictures of Canadian forests in the snow are such that the eye delights to linger on them, but no less full of creative vision, of the subtle allurement of exquisitely balanced light and shade are the pictures of the machinery which turns the pulp into paper.

"There is an article on gold in which the picture of the golden peacock throne of Persia has not more essential beauty in it than a photograph of a workman making Rumanian coins at the British Mint.

"And so with all the articles. They are written by those who have the commercial vision, who can see the interplay of great human and national forces in the development of dominant business houses, who can give commerce and industry self-expression worthy of their place in the modern world. . . ."

Fortune

By Subscription Only — Ten Dollars the Year

FORTUNE, Subscription Dept.
350 East 22nd Street
Chicago, Illinois

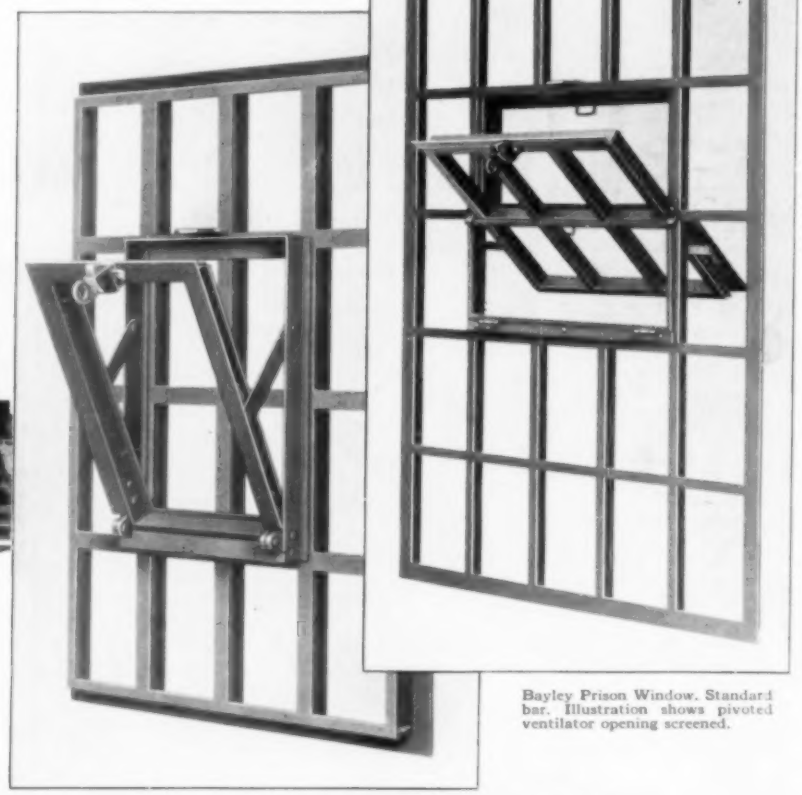
Enclosed find $..... (U. S. $10, Foreign $11, Canada $10.50) to cover a year's subscription for Fortune to be sent to

Name .....

Street .....

City ..... State .....

New York City's House of Detention for Women, equipped throughout with Bayley Prison Windows Screened. Architect, Benjamin W. Levitan. Associate Architects, Sloan & Robertson. Contractors, Psaty and Fuhrman, New York.



Bayley Prison Window. Super bar. Horizontal and vertical bars are continuous through ventilator opening. May be screened when desired.

Bayley Prison Window. Standard bar. Illustration shows pivoted ventilator opening screened.

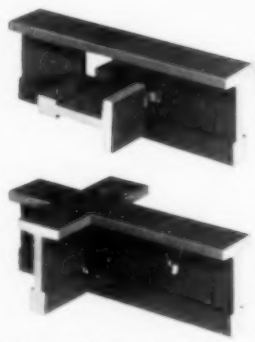
The answer to a pressing need..

BAYLEY WINDOWS *for* Penal Institutions

IN developing windows for penal institutions, Bayley has again pioneered. This organization — composed of engineering and other well-balanced talent — reviewed the conditions and anticipated the present emergency. As a result, Bayley's offering in prison windows adequately meets the present needs.

Cooperating with prison architects and prison officials, these windows have been designed to give an abundance of light and ventilation, and yet are as nearly escape-proof as modern steel construction can make them. They make outside bars unnecessary, and do away with the jail-like appearance of the buildings.

A nation-wide program of new prison building is getting under way. Prison board officials and architects who are interested in prison construction are invited to avail themselves of Bayley's helpful engineering cooperation — based on more than forty-nine years of practical experience. Your request for further information will have our prompt attention. The William Bayley Co., 148 North Street, Springfield, Ohio.



This illustration shows Bayley Super Bar intersection, one third actual size.

District Offices
New York, 67 W. 44th St.
Boston, 5 Park St.
Chicago, 75 E. Wacker Drive
Cleveland, 449 Terminal Tower
Washington, 1427 I St., N. W.
Atlanta, 407 Bona Allen Bldg.
Springfield, O., North St.

Sales Agencies also in Principal Cities

BAYLEY
STEEL WINDOWS & DOORS

New BATHROOM FITTINGS
by artists of America and France

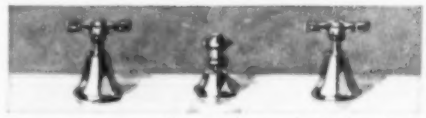
Spout, from the Espagnol-Flamand group. Gold plated

Spout from the English Georgian group. Gold plated

Moderne-Clochettes legs and trim on a Corwith lavatory. Chromium plated

Exquisitely flower-like Design 45 handles, escutcheons, and spouts here adorn a Neumar lavatory, a bath, and shower. Even the legs of the Neumar are of related design

Trianon legs and trim on a marble lavatory. Gold plating effectively brings out the delicate ornamentation



Interesting examples of the work of American artists are the Designs 50, 45, and 40. Note the pleasing effects of contrasting metal and crystal in Design 50; the exquisite filigree work of Design 45; the modern touch in the octagonal planes of Design 40. Platings may be gold, silver, or chromium, on a base of serviceable brass, applied by a special process to prevent peeling and assure complete coverage.

Beneath the surface loveliness of all the fittings shown above, French as well as American, is such engineering quality as only the Crane stamp assures.

BEAUTIFUL design brought new charm to bathroom fixtures. Why need the fittings remain commonplace? These Crane trimmings for lavatories, baths, and showers answer: "They need not."

New, distinctive, they run the decorative gamut from antique to modern, period to present day. Trianon fittings, inspired by the exquisite ornamental bronze in the palaces of Trianon and Versailles . . . Espagnol-Flamand, with the charm of fine metal work in a mansion of Madrid . . . Georgian . . . Moderne-Clochettes; twenty designs are offered, originated for Crane Co. in the Fontaine ateliers of France. No less beautiful and wholly American are the octagonal Design 40, fluted Design 45, and glass-handled Design 50, from our own studios.

You will be interested in seeing these at nearby Crane Exhibit Rooms. A Crane Qualified Contractor-Dealer will make the installation, permitting you to pay monthly under the Crane Budget Plan if you desire.

Valves **CRANE** *Fittings*

FIXTURES, VALVES, FITTINGS, AND PIPING, FOR DOMESTIC AND INDUSTRIAL USE

Crane Co., General Offices: 836 S. Michigan Ave., Chicago + 23 W. 44th St., New York + Branches and sales offices in one hundred and ninety-four cities

DODGE PRICES RANGE FROM $945 FOR THE 16 FT. 40 H. P. 25 M. P. H. RUNABOUT, TO $5300 FOR THE 300 H. P. 38 M. P. H. 28 FT. VICTORIA SEDAN PICTURED ABOVE

SPEED away from city heat in your Dodge Victoria Sedan ◦ ◦ ◦ Whisk away from dock or landing with the power of three hundred horses ◦ ◦ ◦ or laze along through the blissful coolness of lake or river, bay or sound, far from the fume-filled lanes of creeping motor traffic ◦ ◦ ◦ For summer luxury or for the sheer necessity of escape from wilting heat, choose from a complete fleet ◦ ◦ ◦ From the 16-foot 40 h. p. runabout with its 25 miles an hour, at $945, up to the 45-miles-an-hour 28-foot speedster, at $4500, all Dodge Boats are alike in the inherent qualities which have made the Dodge name a symbol for dependable service the world over ◦ ◦ ◦ mahogany planked, with bottoms double-planked ◦ ◦ ◦ sturdy, beautiful and seaworthy ◦ ◦ ◦ they are the most amazing values in boating history ◦ ◦ ◦ Dodge Victoria Sedans are priced at $3,900 to $5,300 ◦ ◦ ◦ Write for the new detailed catalog of Dodge Boats that gives their speeds and specifications in detail. It will be mailed on request.

DODGE BOATS

HORACE E. DODGE BOAT & PLANE CORPORATION. WORKS: NEWPORT NEWS, VA. GENERAL SALES DEPARTMENT: 21 W. 46th ST., N. Y. C.

Is "INSIDE" OFFICE Space a necessary evil?

MANUFACTURED WEATHER *in the Milam Building, San Antonio, Texas, is a major renting feature and at the same time has resulted in important operating economies.*

CAN YOU SEE *where Manufactured Weather enters this office in the Milam Building? Unobtrusive inlets behind plaques or above light fixtures are standard practice in Carrier installations of Manufactured Weather in new buildings.*

Not all the space in a skyscraper can be next to a window . . . but inside offices with Manufactured Weather can be far more comfortable than the old "outside" office ever was

NO renting appeal—however modern—has yet surpassed the primary importance of good air. Everybody used to think that this meant "outside" offices. But no building could be constructed without a certain amount of space remote from windows, and thus less desirable.

Even offices next to windows had their drawbacks. Opening them for more comfort usually meant drafts, distracting street noises, the grime and dust of city air.

Even so, the office with a window was the best at the time, and with every prospective tenant firmly demanding outside space, the building owner was—and still is—up against it to lease inside offices and lower floors, even at lesser rentals.

Now the twin difficulties of drafty, dirty, noisy outside offices and stuffy, uncomfortable inside office space can be completely eliminated. How? By providing office buildings with Manufactured Weather, the Carrier system which—winter and summer—automatically controls temperature, humidity, air motion and air purity. (The lighting of inside office space is solved by new, scientifically correct illumination.)

Visit the 21-story Milam Building in San Antonio, and you'll find every office pleasant and agreeable, even on the hottest and most humid Texas summer day. Drop in at the Chicago Title & Trust Company or the Northern Trust Company in Chicago, and you'll find the exacting routine of these large banks going on smoothly and accurately . . . because employees work under ideal conditions of comfortable and stimulating weather.

Not only does Manufactured Weather create the correct atmospheric conditions for personal comfort and greater working efficiency . . . it also safeguards materials and speeds up processes in more than 200 *types* of industry.

In new buildings and old, Manufactured Weather makes *all* space more desirable, makes "inside" offices and lower floors comfortable and easy to rent. Ask our Newark office to give you specific figures on the investment value of Manufactured Weather.

BUILDINGS NOW STANDING *can have the comfort of Manufactured Weather. Picture shows an office in the Chicago Title & Trust Company, where ducts originally installed for an old-fashioned ventilating system were adapted for a modern Carrier system.*

Carrier Engineering Corporation

NEWARK, NEW JERSEY

OFFICES: New York, Philadelphia, Boston, Chicago, Cleveland, Washington, Detroit, Dallas, Los Angeles

EXPORT OFFICE: 505 Fifth Avenue, New York

CARRIER ENGINEERING CO., LTD.
LONDON, PARIS, BOMBAY, CALCUTTA, JOHANNESBURG

CARRIER LUFTTECHNISCHE GESELLSCHAFT
STUTTGART, BERLIN

Manufactured Weather *makes* "Every day a *good* day"

☆

THROUGH MANY BATTLES

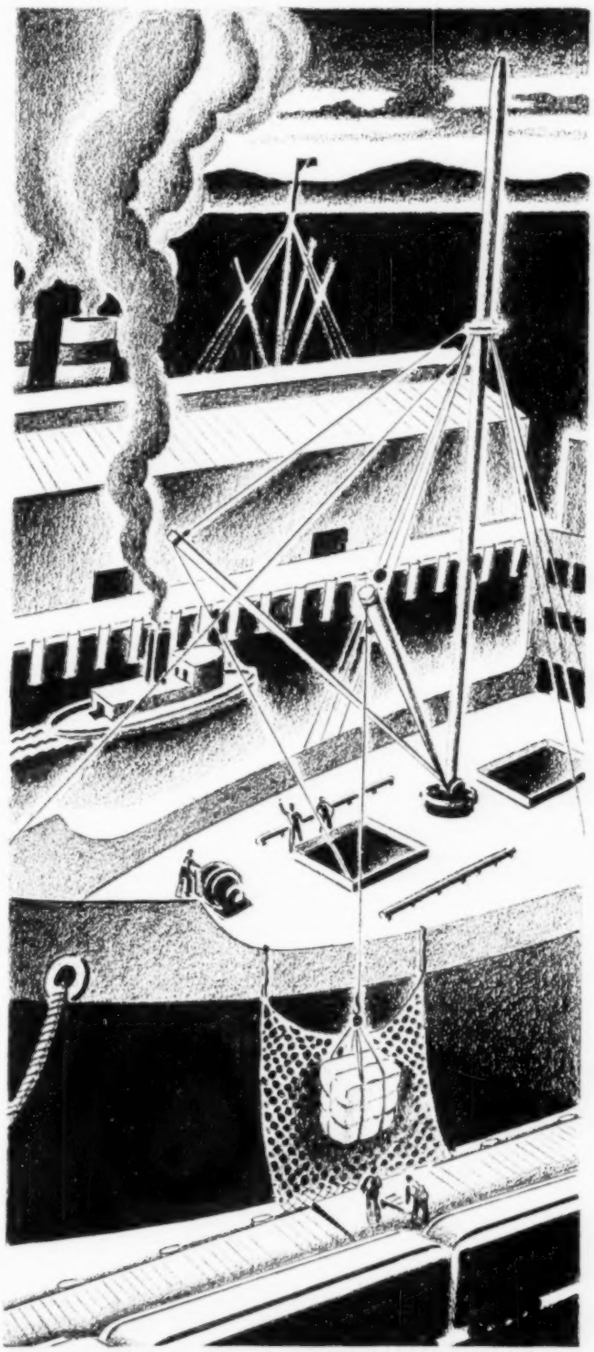
☆

We have several clients whom we have served continuously through as many years as it takes a child to be born and enter college. The business victories we have helped them win have not been single engagements, but the sum total of assaults on many fronts. Steadily to push the line forward through the years calls for changing weapons and tactics, fresh troops, learning from defeats as well as from successes. ☆ After eighteen years of such campaigning, we are today sitting at the council tables of over one hundred and twenty advertisers and marching out with them for their industrial battles from fourteen offices here and abroad.

The H·K·McCANN Company • Advertising

NEW YORK • CLEVELAND • CHICAGO • SAN FRANCISCO • DENVER
SEATTLE • LOS ANGELES • TORONTO • MONTREAL
VANCOUVER • WINNIPEG • LONDON • PARIS • FRANKFORT o.M.

IN THE CENTER OF THE PACIFIC COAST SAN FRANCISCO OFFERS TREMENDOUS ECONOMIES IN PRODUCTION AND DISTRIBUTION



Economy that begins with cheap land for the industrial site and continues through all the processes of production and distribution... that is San Francisco's offer to the manufacturer. And that is why San Francisco is today headquarters for the leading manufacturing interests on the Pacific Coast.

If more than one western city proclaims efficient labor aplenty, cheap power and fuel and abundant raw materials within easy reach, San Francisco alone combines them all with the supreme advantage of excellent transportation facilities. Three transcontinental railroads, a vast network of highways and the vessels of 146 steamship lines facilitate quicker and cheaper distribution from San Francisco than from any other city to 11,000,000 people who live west of the Rocky Mountains.

San Francisco bay, second only to New York in value of waterborne tonnage, is the traditional gateway to the growing markets of the Pacific. 900,000,000 people in the lands that the ocean borders virtually look at America through the *Golden Gate*.

The climate that has helped to bring 1,600,000 people within a radius of an hour's ride from downtown San Francisco aids economy too. No oppressive summer heat slows production; winter is only a borrowed name. Economical natural gas is another tremendous advantage this city offers and in your own thorough investigation you will find many another that plays a part holding for San Francisco the industrial, as well as the financial and commercial, leadership of the West.

San Francisco's commanding position is built upon cold hard facts that any man may know!

Californians Inc., will be glad to send you the book: "Why Manufacturers Choose San Francisco." Address Dept. 2208, 703 Market Street, San Francisco. There is no obligation.

SAN FRANCISCO

IN CALIFORNIA—"WHERE LIFE IS BETTER"

Off the Record

Cranes

RICHARD TELLER CRANE once worked in a New Jersey cotton factory and once worked in a tobacco factory and in 1855 he went to Chicago and erected a small frame building on which he painted a sign which read: "R. T. CRANE, Brass and Bell Foundry." It took him two months to build the building and collect the equipment, and finally everything was ready by the third of July. The next day, of course, was a holiday, but the young man was too excited about his building and the founding of his own business to rest. So on the Fourth of July, 1855, he walked into his place of business and poured the first metal that ever went into a Crane product. And that is why the Crane Co. this year celebrated its seventy-fifth anniversary on Independence Day.

His business prospered. It had no patents, and it had no monopoly. It was not founded on a new invention as is the Radio Corporation. The Crane shop, and remarkably soon the Crane shops, merely put out good valves and pipes and steam cocks, sold them well, and profited. Its now familiar plunge into plumbing and bathrooms came later. But Richard Teller Crane, when he had become one of Chicago's great industrialists and developers, used to delight in telling his hostesses that he was only a plumber. He was—but he was also much more.

In time, as was perfectly fitting, Mr. Crane handed the business down to his sons. Of these, Charles Richard Crane became the president. Always a great traveler, his interest was most centered in the Far East and Near East. In 1909 he was appointed Minister to China by President Taft. Before sailing to China, however, he made, at President Taft's request, a public statement of his policies. President Taft almost immediately canceled his appointment, and the incident remains one of the most startling in American politics. Finding himself in disagreement with the Republican Party, Mr. Crane became a Democrat, and in 1920 President Wilson appointed him Minister to China. And this time the appointment was not withdrawn. In 1914, not because he disliked his business but because he wanted to do something else, he had resigned from the presidency of his company. Since then he has continued his travels and his research in the Orient. Not the least of his adventures there occurred last year when in the Koweit Protectorate he and a party of friends which included his son, John, were attacked and shot at by bandits. The Rev. Henry A. Bilkert, who was driving Mr. Crane's automobile, was killed.

The love of politics extends to Charles Richard Crane's children. His son, Richard Teller II, was first U. S. Minister to Czechoslovakia; another son, John Oliver, is a former secretary to President Thomas Masaryk of Czechoslovakia; a daughter, Frances, married the Czechoslovakian Minister to Great Britain, Jan Masaryk.

The president of the Crane Co. today is Richard Teller Crane Jr. It has been said of him what was formerly said of his white-bearded father—that he would rather visit a Crane shop than attend the opera. True it is that he is hardly ever in Chicago, that he is apt at any moment to appear at one or another of the many Crane factories. As far as music is concerned, there *is* an organ in his Chicago house. His philanthropies are large (he has built two hospitals), and his social activities he leaves in the capable hands of his wife, a sister of Mrs. Joseph Patterson. Mr. and Mrs. Crane live in a huge old-fashioned Lake Shore Drive house. It is amusing to note that there are no modern Crane bathrooms in it. Another Crane house, however, at Ipswich, Massachusetts, does have the bathrooms colorfully advertised by the company.

Thus far, rather unlike his father is Richard Teller Crane Jr.'s son, Cornelius. Recently elected a director of the company, he has not yet worked therein, prefers to make scientific expeditions to the South Seas in his 147-foot *Illyria*.

Of the five sons of the original Richard Teller Crane, three are alive: Charles Richard Crane, the former Minister to China; Richard Teller Jr., the Crane president; and Herbert Prentice Crane, a not very active director of the company. Herbert's son, however, Charles Richard II, has been with the company twenty-two years, and it may be he who will be the next president of the company.

* *

As of many another man of prominence, it may in all friendliness be said of Mr. Charles Richard Crane that he knows what he likes and gets what he wants. One thing that Mr. Crane particularly liked was the Rigistan, the old University square in Samarkand. Another thing he liked was a painting one foot square that he happened to see one day in Tiflis. And a thing which Mr. Crane wanted was an oil painting of this particular Rigistan which had taken his fancy. Mr. Crane's method was simple and direct. He discovered the unknown artist who had painted the little painting, took him to Samarkand and said, "Paint." Giga Gaboyeff, for that was the artist's name, obeyed. He painted several scenes for Mr. Crane, taking in all two years to finish them. But Mr. Crane was more than satisfied. No one else, he thinks, has so well caught the spirit of the East. Giga Gaboyeff's painting of the Rigistan in Samarkand is reproduced on page 47 of this issue.

The Gaboyeff paintings now hang in Mr. Crane's home on Park Avenue, Manhattan. In fact, in its way, this home is a miniature museum of the Far East and Near East. And Mr. Crane likes it so.

Ayrshires

SOMETHING there is about many people that loves Ayrshire cows. For in its May issue FORTUNE printed an article dealing with cows, and in the course of it made mention of Guernseys and Holsteins and Jerseys. But no mention was made of Ayrshires, and from many a state came gentle remonstrance.

Most beautiful of all the breeds, said some of these remonstrators, is the Ayrshire. White, with brick-red spots (the most fashionable today have red cheeks and a red neck), the Ayrshire carries itself proudly. It has a smooth back and rounded hips. But behind beauty is danger. The Ayrshire has horns of a unique and peculiar shape; they come out forward and turn sharply up. Behind the horns is a nervous disposition and a tendency to meanness. That may have something to do with the fact that there are only about 90,000 of the breed in America. And in this mechanical civilization another factor acts against them. Their teats are not long enough for efficient milking by machine. Yet with all these faults there are enthusiastic breeders of the race who insist that no other cow equals the Ayrshire.

Under the innumerable sycamores upon the 800 acres of Mrs. E. R. Fritsche at Douglassville, Pennsylvania, roam the Ayrshires who furnish the milk for the cafés where food and drink are obtained by putting money into slots. Mrs. Fritsche, who keeps her 160 cows in barns colored like themselves, red and white, has a large interest in the Horn & Hardart cafeterias. She is also a director of the Ayrshire Breeders' Association, the only woman director of a stock association in the country. At Sycamore Farms she serves at one time both her interest in cafés and in cattle. Her Ayrshires and her Berkshire hogs, which reach the automat in the form of pork chops, have won many prizes at stock shows.

At Fillmore Farms at Bennington, Vermont, upon level fields at the foot of the White Mountains, James C. Colgate, of James B. Colgate & Co., brokers, has 300 head of Ayrshires. Percival Roberts Jr., of the finance committee of the U. S. Steel Corporation, keeps one of the largest and most highly developed herds of Ayrshires in the country at Penshurst Farm near Philadelphia.

Potato Paradise

THE Mic Macs and Tobiques, who were Indians, were the first people to live in the Aroostook Valley, and it was they who thought of its name, which means "dark water." In the late seventeen hundreds the first white settlers arrived from southern Maine and later, due to the efforts of an ambitious U. S. Minister to Sweden, some

A NEW MODEL NOW

An improved, more automatic Mimeograph is today at your service. The new model achieves high speed with perfect registration. Clever redesigning has made *one unit* of the stand and mechanism, entailing many handy betterments. The new automatic feed, with self-leveling table, takes a full ream of impression paper at one time. Simplified operating controls! New type of receiving tray! A truly remarkable Mimeograph, for the better duplication of all kinds of form letters, bulletins, charts, etc., at small cost. Get particulars from A. B. Dick Company, Chicago, or in principal cities.

MIMEOGRAPH

International imports

©Pinaud 1929

A banker in Manhattan . . . a British Colonel in Singapore . . . a famous sportsman of the Argentine . . . it is literally true that there is not a corner of the civilized globe where civilized masculinity does not swear by these two brilliant indispensables: *for the hair* PINAUD'S EAU DE QUININE—literally the most famous tonic and dressing in the world . . . *for after shaving and as a toilet water,* PINAUD'S LILAC VEGETAL—pungently fragrant, miraculously soothing and rejuvenating. You can obtain them both at any druggist's—blended now, exactly as when Pinaud first perfected them generations ago, with essences imported direct from France. PINAUD, PARIS-NEW YORK.

Off the Record—*Continued*

Swedes settled in the Valley in a little town which, with no originality but with a certain pride of colonization, they called New Sweden. The Valley was a pleasant enough place, but no one at first thought that it would achieve industrial prominence and actually become one the great prides of the citizens of Maine. Its industrial prominence is due entirely to potatoes. It was thought at first that it would be lumber that would make for money (there still exists one Aroostook lumber company), but lumberjacks have to eat and to take care of that urgency somebody planted some potatoes. They grew surprisingly well and some years later several bushels were shipped to Boston. From that shipment dates the ever-increasing fame of the Aroostook potato.

Today so organized is Maine's potato industry that at harvesting time almost the entire crop can be placed under cover and in easy access of shipment. In 1926, from the 42,688 cars of potatoes which Maine shipped to twenty-eight states, the growers received an estimated return of $37,000,000. Besides this, 15,000 cars were diverted to the farmers' tables and for seed. That was a fairly good year—the year 1925 was terrible—but it is of 1923 that residents of the Valley like to speak. In that year the average yield of potatoes in the United States was 108 bushels an acre. But in Aroostook they produced 266 bushels an acre, and that is probably a world record.

The year 1929 was also a source of great satisfaction. There were drought and frost in Michigan, Wisconsin, and the Northwest, there was a crop failure in Canada, but the Valley, untouched, produced one of the largest crops in its history.

. . .

Aside from their potatoes, the natives of the Valley take greatest pride in their horses. Without exception they are high-bred Percherons, but they are farm economy, for horses, not tractors, do the work. The Valley is a one-crop country. Only one farmer produces honey to sell; most of them raise a few oats or buckwheat but only to feed the horses. There are not eggs enough to supply the local market; there is not a creamery in the county. Potatoes are the main food supply, a very unusual thing in a one-crop region. Poultry-raisers generally abjure eggs, the butter farmers of Denmark eat margarine, but in Aroostook, potatoes are served three times a day. Seven potatoes are considered a good Sunday meal.

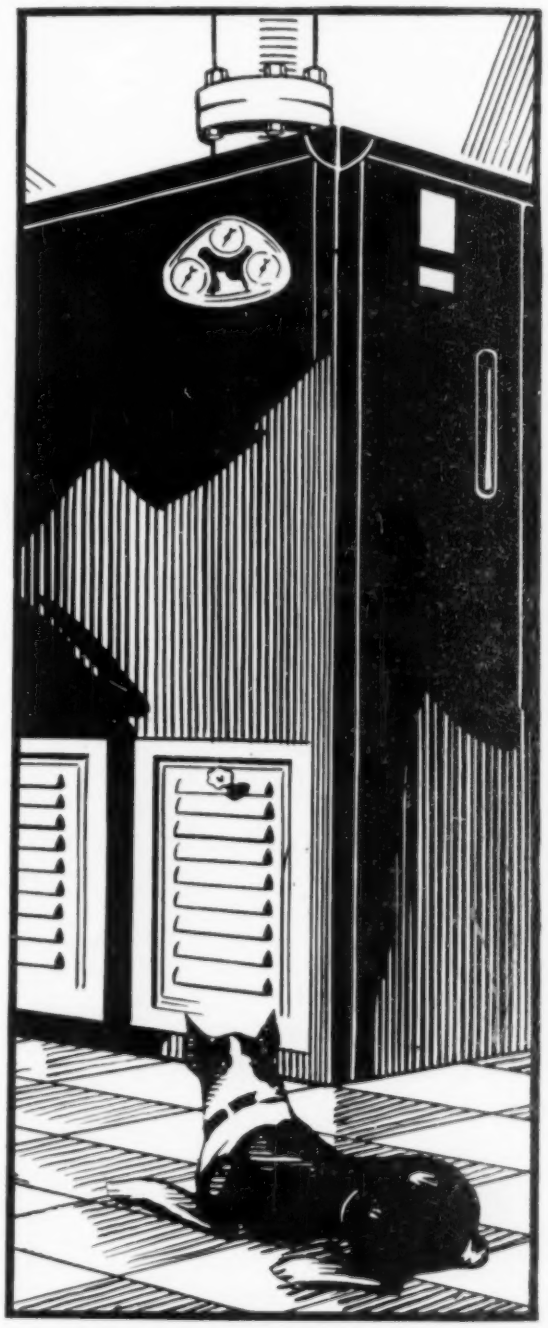
There have been mortgages paid and unpaid on the potato crops. Although it has no tickers installed on its fields, Aroostook is often rocked on the most surprising waves of finance, but generally it has not been caught in an undertow. It is a Spud Paradise and those who have made it so have been richly, if unevenly, rewarded by their many-eyed protégés.

. . .

Perhaps no more pointed example of Maine's pride in its potatoes exists than that afforded by the violent objections of Maine's Representative Snow to his discovering on the menu of the House Restaurant the words "Idaho Potatoes," conspicuously written in red ink. To him such discrimination was tantamount to treason, and his expostulations fairly burst from him. No less loyal are the growers themselves. They have even written poems praising their Valley. Like most poems, they are rather poor.

. . .

What really launched the potato industry in Maine was the building of the Bangor & Aroostook Railroad. Before its completion Maine potatoes were chiefly used for starch. The railroad gave the rest of the country access to the potato market, and after its construction the starch industry declined rapidly. If the railroad helped the potatoes, the potatoes gratefully have returned the assistance. Unlike many a small New England road, the Bangor & Aroostook last year showed a comfortable margin of net earnings. None is more keenly aware of this satisfying condition than Mr. Percy Todd, president of the line. For many a year he has brought minute attention to all the details of his road. He even has a speedometer in his private Pullman car. When a Bangor & Aroostook engineer drives too fast, he signals to him to stop. Mr. Todd, too, it may be presumed, likes potatoes.



The Swing to GAS HEATING

All across the country the trend is clearly marked. In community after community gas companies have organized aggressive sales activities to capitalize the lively public recognition of the fact that, in the field of house-heating, no fuel is equal to gas. ★ This intensive cultivation of the vast domestic market for gas ushers in a new era of service in the gas industry—assures a new standard of living comfort, based upon Automatic Gas Heating, "the greatest single convenience ever offered the American home."

THE BRYANT HEATER & MANUFACTURING COMPANY
17852 ST. CLAIR AVENUE ·· CLEVELAND, OHIO

BRYANT
GAS
HEATING

He got the Business

while his competitors were still on the way

—and still another

"Gets the Business"

"PLEASE have a sales representative call as soon as possible." This wire from a "hot" prospect caused the sales manager of a large eastern manufacturing company some concern.

"As soon as possible" meant at least twelve hours by car—by train, virtually three days to make the round-trip. And his competitors were also after the job. Then he recalled reading the advertisement reproduced above . . . *by plane*—only three hours!

Boarding a transport plane he flew to the customer's city. The customer was impressed, signed the order and the sales manager returned to his office *the same day*. It was another case of the first one there, "gets the business."

The sales manager's company—having witnessed the value of fast air transportation—is now ready for a company-owned plane. And because Ryan offers proved business planes, they are planning on the purchase of a Foursome—a de luxe, 4-place executives' model. In addition to the Foursome, Ryan builds the Brougham for six and the Wasp-powered Brougham for seven.

Let us show you how you can use a Ryan to advantage in your business. Write today and we will send you our illustrated catalog and arrange to have a representative call.

SISTER SHIP OF THE RYAN "SPIRIT OF ST. LOUIS"

DETROIT AIRCRAFT

FORT AND CAMPAU STREETS, DETROIT

CHANIN BLDG., NEW YORK :: ROOSEVELT BLDG., LOS ANGELES

RYAN AIRCRAFT CORPORATION
LOCKHEED AIRCRAFT CORPORATION
PARKS AIR COLLEGE, INCORPORATED
PARKS AIRCRAFT CORPORATION
EASTMAN AIRCRAFT CORPORATION
AIRCRAFT DEVELOPMENT CORPORATION
BLACKBURN AIRCRAFT CORPORATION
MARINE AIRCRAFT CORPORATION
GROSSE ILE AIRPORT, INCORPORATED
GLIDERS, INCORPORATED
AIRCRAFT PARTS COMPANY, INCORPORATED
DETROIT AIRCRAFT EXPORT CORPORATION

Mr. Kraft's Skeletons

MR. JAMES L. KRAFT is the board chairman of the Kraft-Phenix Cheese Corp. As such, his interest is of course largely lacteal. He has invented many of the company's cheese-making processes, and he likes cheese. But Mr. Kraft has another interest, and to this interest, too, he devotes much time and attention. Mr. Kraft, in every sense of the word, is an antiquarian.

On the paneled walls of his Chicago office hang six large and rather unprepossessing plaques bearing the imprints of very ancient fish fossils. There are also funeral urns, stone weapons, idols. At his home Mr. Kraft has one of the world's largest collections of uncut jade, three statuettes from Palmyra which date to 400 B. C., a stone tablet revealing some intimate details of the life of Nebuchadnezzar, and a complete set of Babylonian "virgin lamps," said to have been tied at night to the ankles of Babylonian virgins so they could find their way on dark roads. In Lincoln Park soars a forty-foot totem pole, Alaskan in origin, and until he gave it to the city Mr. Kraft's property. And in one of Chicago's museums are two Indian skeletons that were found in an Alaskan glacier. For some time Mr. Kraft kept these two in his home, but finally he gave them to the museum. Mrs. Kraft could not stand them.

Medals and Emblems

THE business founded by Mr. B. S. Whitehead and Mr. C. R. Hoag (known naturally as Whitehead & Hoag) is rather odd. It is odd because its success depends upon the achievements of persons who, although they may have heard of the company, are never even remotely connected with it. Whitehead & Hoag make medals, all kinds of medals. And since the days of the Ptolemies (and even before) it has been man's particular pleasure to give medals to such of his kind as achieve some sort of distinction. Whitehead & Hoag, aware of this habit, are prepared to make any kind of medal you want. You give it to your particular hero, and you and the hero can have all the fun. Somebody, of course, pays the company. It is all for profit to the firm and courtesy to the heroes. Few businesses have so charming a *modus operandi*.

Whitehead & Hoag made Woodrow Wilson's inaugural medal, the only one ever made outside of the government mints. They also made one of the more official medals presented to Colonel Lindbergh. They have made currency for certain South American countries and could make U. S. money too if the government would let them. Of course, the company makes things other than medals: badges for Elks or firemen or conventions, for instance; badges for Presidential campaigns; company souvenirs; celluloid signs for use on counters. The company has its rivals, but it is probably the best known of them all.

In all Whitehead & Hoag are interested in six branches of work: medals, celluloid articles, signs, badges, leather articles, emblems. But it is especially due to their work with the medals and emblems that they have achieved a certain measure of fame. Mr. Whitehead was once a printer; Mr. Hoag a jobber in the paper business. Neither seemed destined to be a hero. They did what may be the next best thing. They became the exterior decorators of heroes and near-heroes. It is on the whole a pleasant occupation.

WHITEHEAD & HOAG PLAQUE

The above plaque was presented to the first thousand passengers who took the New York-Los Angeles Rail-Air Route.

Try this ON YOUR WIFE

. . . if you fail to predict *her* preferences how can you expect to guess those of women you have never seen?

GIVEN her choice, which of the three hats pictured above would your wife select?

This question was put to ten business men. Only three of them answered it correctly. Their effort to forecast the choice was a complete failure for, on the basis of pure chance, one out of three was sure to guess right.

Try this on your own wife. If you have daughters or sisters, try it on them. Then remember the result every time you are asked to pass judgment on advertisements.

The Taste of the Fish

Not so long ago someone said, "It isn't the taste of the angler that decides the kind of bait to be used — it's the taste of the fish!" That axiom ought to be framed and hung in the office of every executive who has anything to do with advertising copy. Effective copy must appeal to prospects, and you can never be sure that what appeals to you will appeal to them. No man knows the likes and dislikes of enough people to predict the preferences of millions whom he has never seen.

Let Your Prospects Decide

We have developed in this agency a method of determining which ads appeal most to prospects, and determining this before one dollar is spent for costly space in magazines or newspapers. All the brains we possess are first focused on the preparation of effective ads just as is done in every agency sincerely interested in its clients' welfare.

But there is this difference in Dyer-Enzinger procedure. We prepare (in rough sketch form) at least three times as many ads as will be needed for publication and we find out which of these will secure the greatest sales response from the men and women to whom they are addressed.

Quite often the ad that both our client and ourselves would have bet heavily against romps home far in the lead. Sometimes the very last idea to be thought of is first in appeal to readers.

Drop a line to George Enzinger in Milwaukee, or J. W. Lee, Jr. in New York for a description of this new approach to the greatest of advertising problems, a method which adds substantially to the producing power of every dollar of your appropriation.

DYER-ENZINGER COMPANY, INC., *New York, Chicago, Milwaukee*

GOOD NIGHT

The
Book-Cadillac Hotel
DETROIT

Good night

When night comes down in Detroit, they say there's great content among the traveling men. Even at dusk, they slip away from lobby chairs, from groups in rooms, to lock their doors and pile in bed and read and rest and *sleep*. You see, you come to us from nearby or far away and you're wistful and hot, hungry and tired, and we're your hosts, and find *for you* the softest and sleepiest bed in all the world. We *know* you *sleep* and rest for you tell us so; and maybe, too, we tiptoe 'long the corridors (after the ca. has been put out) to listen at your transom to the songs you sing and hum, unknowingly, as you *sleep* in a cool and cozy room, in a bed as soft and as drowsy as a winter's night. *Good night*. See you soon.

The
Book-Cadillac
Hotel
ON WASHINGTON BOULEVARD
THE STREET OF FINE SHOPS
DETROIT

CARL M. SNYDER — MANAGING DIRECTOR

Statistics

TO THE Metropolitan Life Insurance Company life is a series of statistics. If you are making $2,500 a year, for instance, and unto you a son is born, the Metropolitan coldly and accurately values your child at just $9,333. By the time your son has reached eighteen, he is worth $28,654 to you. Since it has cost only $7,238 to raise him, it is plain that children are a gilt-edged investment.

If you are that mythical creature, the "average man," the Metropolitan observes that you lose seven days a year through sickness. Every year preventable deaths snuff out lives worth over $6,000,000,000.

• • •

Missouri airplanes are safer than Missouri mules. Almost twice as many people died there last year from mule kicks as from air crashes.

• • •

Every day about $22,000,000 of old paper money is replaced by new, which is considerably slower than was anticipated. Of the $4,793,831,903 in paper currency floating around the country (or anchored securely in banks) about 22 per cent is still in old bills.

• • •

Every man, woman, and child in England spent an average of $32 on liquor last year. The per capita figure for this country is estimated by the Wets at $21.

• • •

Phone talks, long suspected to be the nadir of civilized conversation, have now been mathematically demonstrated to be such. Bell engineers, listening in on thousands of telephonic conversations, most of them business calls, found that nearly half the words spoken could be included in a list of thirty words, and that 80 per cent of the 79,390 words they heard were one or another of 155 words. The pronoun "I," used 3,990 times, led all the rest.

• • •

In 1929 Americans spent $250,000,000 on fine art. The market crash threw no large collections on the market, nor did it cause any drop in prices of *objets d'art*. About one-third of the total amount spent went for Old Masters, notably for Piero della Francesca's *Crucifixion* ($375,000) and Fra Filippo Lippi's *Madonna* ($125,000). Etchings, lithographs, and such are estimated to have brought $25,000,000 last year.

• • •

In 1929 Americans spent more than $600,000,000 on candy. Sweets sales responded only feebly to such sentimental occasions as Valentine's Day and Mothers' Day, more vigorously to feast days like Christmas and Thanksgiving. The percentages above normal were Valentine's Day, 9 per cent; Mothers' Day, 20 per cent; Thanksgiving, 28 per cent; Easter, 42 per cent; Christmas, 141 per cent.

• • •

The average citizen has an income of $749 a year in this country as against $409 in Great Britain and $201 in France, the next two highest. On the other hand, a square mile of U. S. territory has only $29,540 a year, which is less than the same area has in Germany, France, Italy, and, richest of all, Great Britain, which has $195,638. However, the average citizen cares much more about his income than does the average square mile.

• • •

Eight miles an hour is slow on the horizontal plane, but not so slow on the vertical. It is the speed limit (700 feet per minute to be exact) for the elevators in the New York Life Insurance Building.

• • •

The impact with which Napoleon has impressed himself on history is measured by the 40,000 books that have been written about him, almost one a day since his death.

Courage in Business

All modern industrial and mercantile expansion depends upon *Courage*. It explains progress. It determines the limits of individual success. It is the physical expression of confidence and belief.

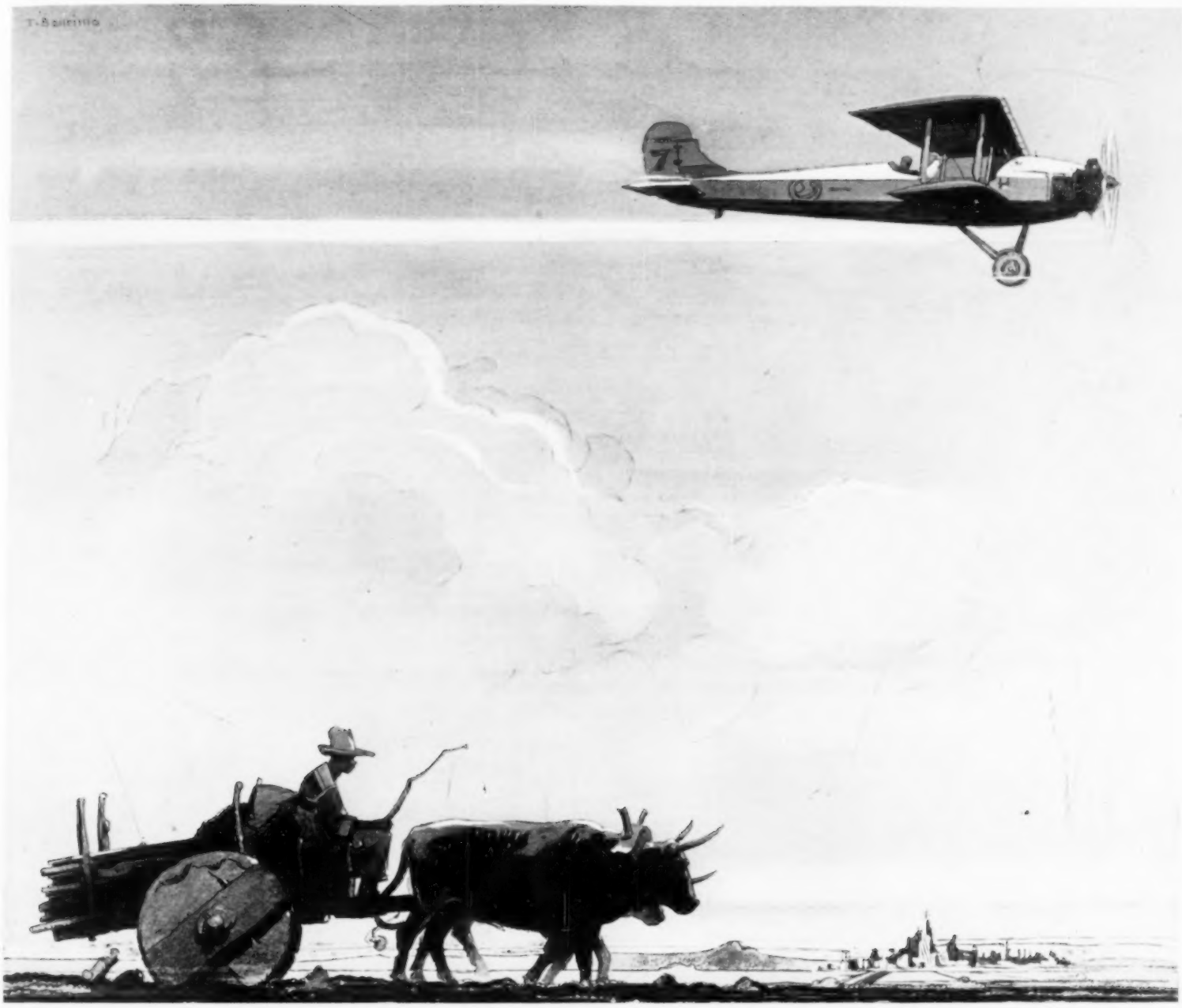
Business moves forward only so far as it is led by men with the vision of new conditions, new ideas, new forces, new methods —*and the courage to put them through*.

Companies lacking this leadership are left behind after every period of inflation. Courage is not governed by conditions; it controls conditions. It not only recognizes, but *corrects*, weak organization, backwardness, inefficiency.

Courage is inspired by knowledge. Knowledge dispels fear. Exact knowledge of one's business comes from the analysis of facts incident to sound planning, and from the frequent comparison of operating results with a well-made Budget. Weaknesses and wastes are made apparent and knowledge of better ways, *with courage*, eliminates them.

ERNST & ERNST
ACCOUNTANTS AND AUDITORS
SYSTEM SERVICE

AKRON	GRAND RAPIDS	PORTLAND, ME.
ATLANTA	HARTFORD	PROVIDENCE
BALTIMORE	HOUSTON	READING
BIRMINGHAM	HUNTINGTON, W. VA.	RICHMOND
BOSTON	INDIANAPOLIS	ROCHESTER
BUFFALO	JACKSON, MISS.	ST. LOUIS
CANTON	KALAMAZOO	ST. PAUL
CHICAGO	KANSAS CITY	SAN ANTONIO
CINCINNATI	LOS ANGELES	SAN FRANCISCO
CLEVELAND	LOUISVILLE	SEATTLE
COLUMBUS	MEMPHIS	TAMPA
DALLAS	MIAMI	TOLEDO
DAVENPORT	MILWAUKEE	TULSA
DAYTON	MINNEAPOLIS	WACO
DENVER	NEW ORLEANS	WASHINGTON
DETROIT	NEW YORK	WHEELING
ERIE	OMAHA	WILMINGTON, DEL
FORT WAYNE	PHILADELPHIA	WINSTON-SALEM
FORT WORTH	PITTSBURGH	YOUNGSTOWN



"To save time is to lengthen life—"

"ACCELERATION, rather than structural change is the key to an understanding of our recent economic developments."

—FROM THE REPORT OF PRESIDENT HOOVER'S COMMITTEE ON RECENT ECONOMIC CHANGES

THE PLOD of the ox-cart. The jog trot of the horse and buggy. The rush of the high-powered motor car. The zoom of the airplane. Acceleration. *Faster* speed all the time.

Speed and more speed in production, transportation, communication, and as a result, more wealth, more happiness, and yes, more leisure for us all.

Scientific research has been the pacemaker of this faster, yet more leisurely, existence. At a steadily increasing rate it is giving us hundreds of inventions and improvements which speed up work, save time and money, revolutionize life and labor in the modern age.

Conceive how much time modern electric lighting has saved the American people—not to mention the billion dollars a year in lighting bills saved by the repeatedly improved efficiency of the MAZDA lamp. Think of the extraordinary democratization of entertainment and education made possible by the radio tube!

Both these benefits to the public owe much to the steady flow of discovery and invention from General Electric laboratories. So do the x-ray and cathode-ray tubes, the calorizing of steel, atomic-hydrogen welding, the generation of power for home and industry at steadily lower costs.

The G-E monogram is a symbol of research. Every product bearing this monogram represents to-day and will represent to-morrow the highest standard of electrical correctness and dependability.

FOR THE HOME—General Electric and its associated companies manufacture a complete line of electric products including G-E MAZDA and G-E Edison MAZDA lamps, G-E refrigerators, G-E fans, G-E vacuum cleaners, G-E wiring systems, Edison Hotpoint heating appliances, and G-E motors for other household electric products.

FOR INDUSTRY—Several thousand electric products and appliances, including generating and distributing apparatus, motors, electric heating apparatus, street lights, floodlights, traffic lights, airport lights, Cooper Hewett lights, Victor X-ray apparatus, motion-picture apparatus, electric locomotives and equipment, and street-car equipment.

JOIN US IN THE GENERAL ELECTRIC PROGRAM, BROADCAST EVERY SATURDAY EVENING ON A NATION-WIDE N. B. C. NETWORK

GENERAL ELECTRIC

SPARTAN

ready at a moment's notice

WHENEVER there are important engagements and many widely scattered cities to visit, there is no substitute for the speed and economy of air travel. To the executive every business hour has its actual monetary value, and the airplane is the only means of travel that allows him to collect an added premium on his time. ¶ The Spartan cabin monoplane is particularly suited to the exacting needs of business men. It has ample room for four persons and their luggage. Its Wright Whirlwind engine gives it a speed of 130 miles per hour, a cruising range of 615 miles, and it is as easily landed on the small private field as on the airport. ¶ For mile after mile a Spartan will fly itself without your help at the controls. And, quite as surprising, its cost of operation is only slightly more than that of the average motor car. ¶ Whether you are considering a plane for business or sport, a cabin or an open biplane, there is a Spartan model to fit your requirements. And . . . regardless of where you live . . . a demonstration by a factory representative can be arranged without obligation. Write Department F for catalog in full colors showing all Spartan models. » » »

SPARTAN AIRCRAFT COMPANY
TULSA, OKLAHOMA

The Spartan cabin monoplane is powered with the Wright Whirlwind Seven. Standard equipment includes dual controls, metal propeller, booster magneto, electric starter, complete instrument panel, oleo gear, Bendix wheels and brakes, adjustable stabilizer, navigation lights. Spartan biplanes, fully equipped, are offered with the choice of » » » » » » either the five or seven-cylinder Wright Whirlwind engine. « « « « « «

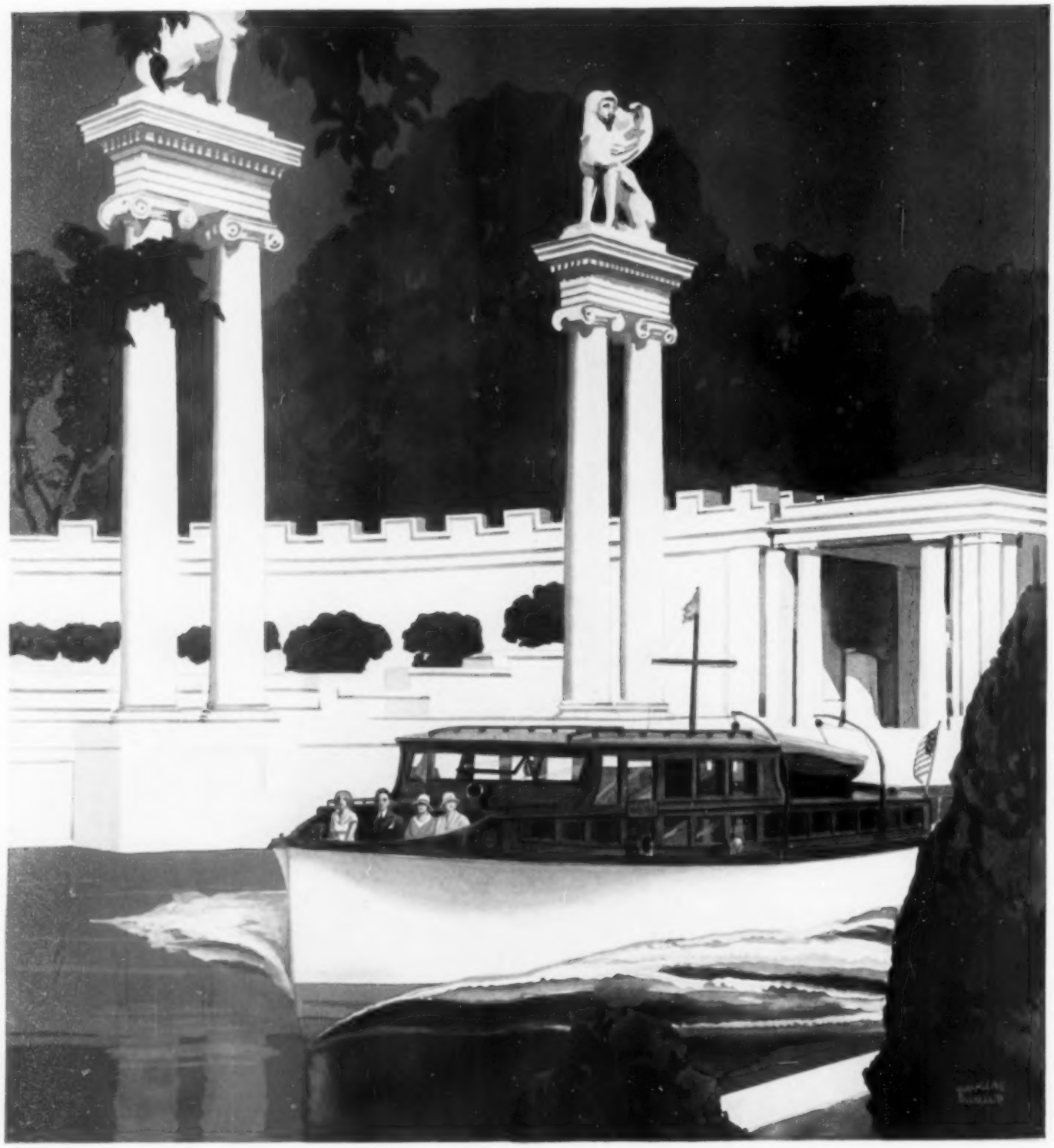
SURE-FOOTED

THE FIRESTONE SUPREME BALLOON is sure-footed—the strongest, safest tire ever built. Its rugged tread grips the road and provides safety against skidding—its Gum-Dipped cords provide strength and unfailing dependability at high speeds. Here is tire equipment of ultra performance—freedom from troubles and insurance of long mileage. Supreme Balloons are appearing in ever increasing numbers on America's finest, fastest cars. The Firestone Dealer will gladly equip your car today.

Firestone

Supreme Balloon

Copyright, 1930, The Firestone Tire & Rubber Co.



The Record Breaking

FAIRFORM FLYER

56' Fairform Flyer, built by Huckins Yacht Corp., Jacksonville, Fla. Equipped with twin Dolphin Special 6 cylinder Sterling engines 290 H. P. each, 1950 R. P. M.

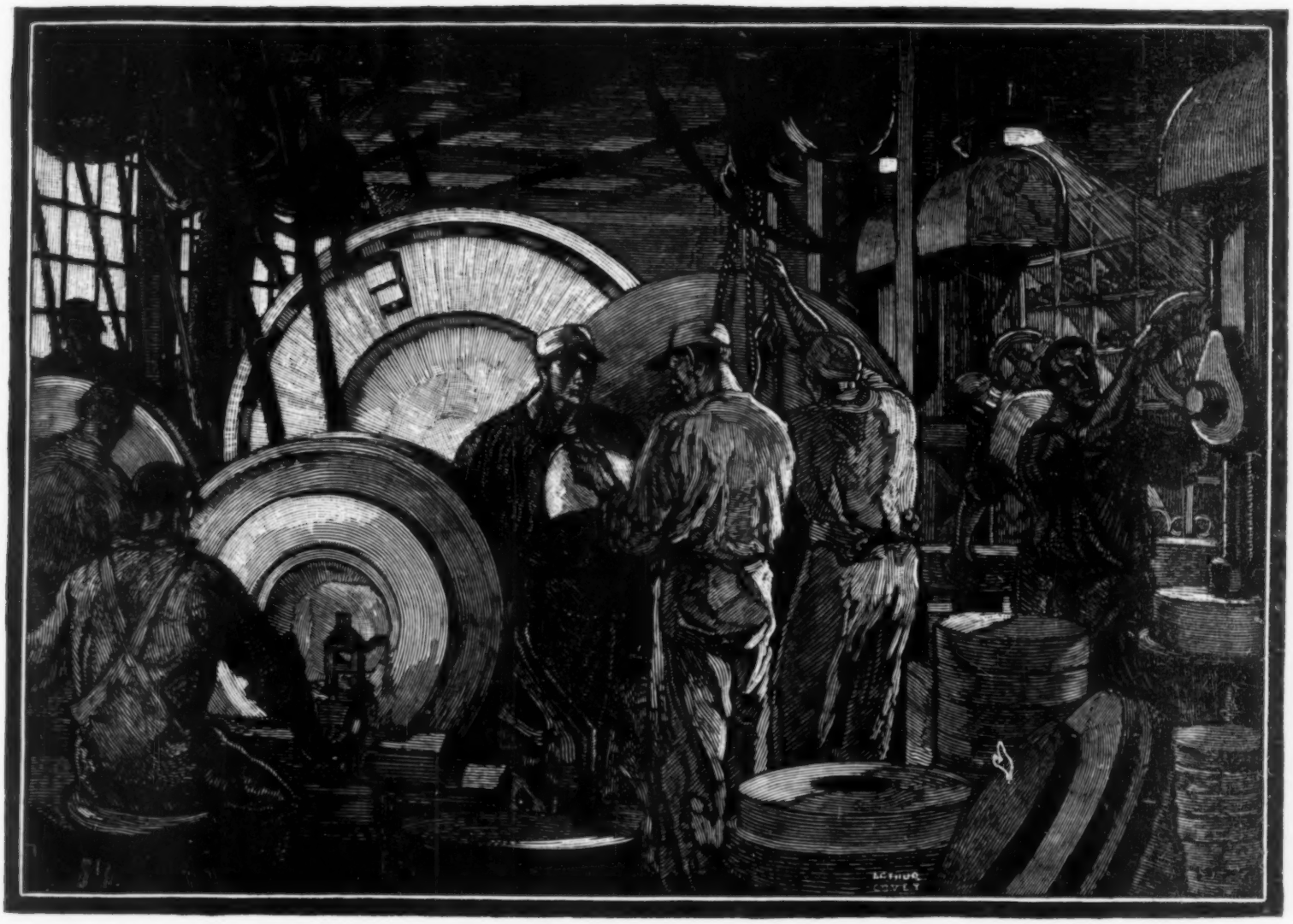
Modern in design and speed, equipped with established seasoned engines, the new Fairform Flyer suggests a late afternoon cruise—the antithesis of the lawn party of the 'eighties. Or, perhaps a week end journey of exploration—new scenery, open space, relaxation, and kindred terms, that prepare you for Monday with a feeling of having rediscovered America. . . . . .

STERLING ENGINE COMPANY

BUFFALO, NEW YORK, U. S. A.

W. H. Moreton Corp., Distributors, Boston

Bruns, Kimball & Co., Distributors, New York



Wood block engraving by Howard McCormick from mural by Arthur Covey.

NORTON

Grinding Wheels

Grinding and Lapping Machines

Refractories

Porous Plates

Floor and Stair Tile

Pulpstones

MILLIONS of gems, precious stones — tiny cutting tools chemically like the ruby and the sapphire — bonded together to form a Norton Grinding Wheel. The point of a diamond or a tool of hardened steel shapes them to accurate dimensions and they are ready to serve the world in its conquest for precision with rapid production. Norton Company, Worcester, Mass.

The New York Trust Company

Capital, Surplus and Undivided Profits $47,000,000

DOMESTIC
and
FOREIGN BANKING
FACILITIES

Trust Services

Personal Services

---

100 BROADWAY
40TH STREET AND MADISON AVENUE
57TH STREET AND FIFTH AVENUE

Why "52.7%" Had an Immediate Effect

ON BUYERS, DEALERS, SALESMEN, COMPETITORS AND THE ASSOCIATION

While "over 50%" Made No Impression

THIS is a report of a small campaign so forceful in its influence that the industry's Association requested that the copy, though true, be toned down.

$15,000 was appropriated by a national producer of a basic building material for local newspaper advertising in the market surrounding a new mill. Newspaper space was to be used, primarily in the smaller cities and towns, for a two-months' introductory campaign.

It was decided to make this a test case: To determine how much distribution and volume could be obtained at the minimum expense, and to find out whether a Sales Idea could actually create demand and thereby demonstrate that advertising on a basic material need not be mere publicity.

While the copy was in preparation, the strategy of the plan as a whole was developed. Each county was analyzed and assigned a value—based on its annual consumption. It was arranged that each salesman should release the newspaper schedule in local papers over the names of the local dealers who placed carload orders. Each advertisement listed in large type the important materials other than our client's product which the dealer sold.

A study of the product and the process of manufacture, suggested a direct comparison with the United States Government standard of quality. It revealed that this product averaged 52.7% higher than the Government standard.

This exact comparison was chosen as the basis of the copy plan —a simple fact which conveyed an obvious conclusion. It was illustrated with vertical bar charts, which supplemented and fortified the copy.

The salesmen took hold of the plan enthusiastically.

Within a few weeks, 150 carload orders were booked. Soon the newspaper advertisements appeared throughout the country...dealers became actively interested...buyers noted the facts presented...contractors, engineers, architects and public officials began to talk about the product...sales to consumers followed... reorders from dealers multiplied.

Note that the Sales Idea, *"52.7% above U. S. Government Standard"*, was accepted as a *fact*. The implications of this fact were left to the reader. He acted on his own inference, not the advertiser's.

A curious situation arose. The head of the national association visited the advertiser and urged that the copy, though true, be modified: *It was apprehended as a possibility that new rulings, raising the government standard to an unreasonable level, might result.* In addition, there were rumors that a price-cutting campaign might be instituted by a group of local mill owners who were aroused by the demand created by this copy.

The advertising staff was instructed to "soften" the campaign, to remove its sharp selling appeal. The figure of "52.7%" was thereupon changed to "over 50%". Immediately the force of the campaign abated. Demand fell to a fraction of its former strength. Word-of-mouth advertising decreased. Association officials and local competitors were satisfied.

THIS case illustrates the difference between "selling copy", which impresses the reader with its sincerity, and stereotype copy which is regarded as "advertising talk". Similar examples could be found in several notable campaigns of recent years, yet today the neglect of this principle undermines the effectiveness of many large appropriations.

In this organization the use of selling copy, as exemplified in the above campaign, is one of two major principles.

The other is strict adherence to a professional fee system of compensation which separates our profit from all normal variations in the client's appropriation and schedule.

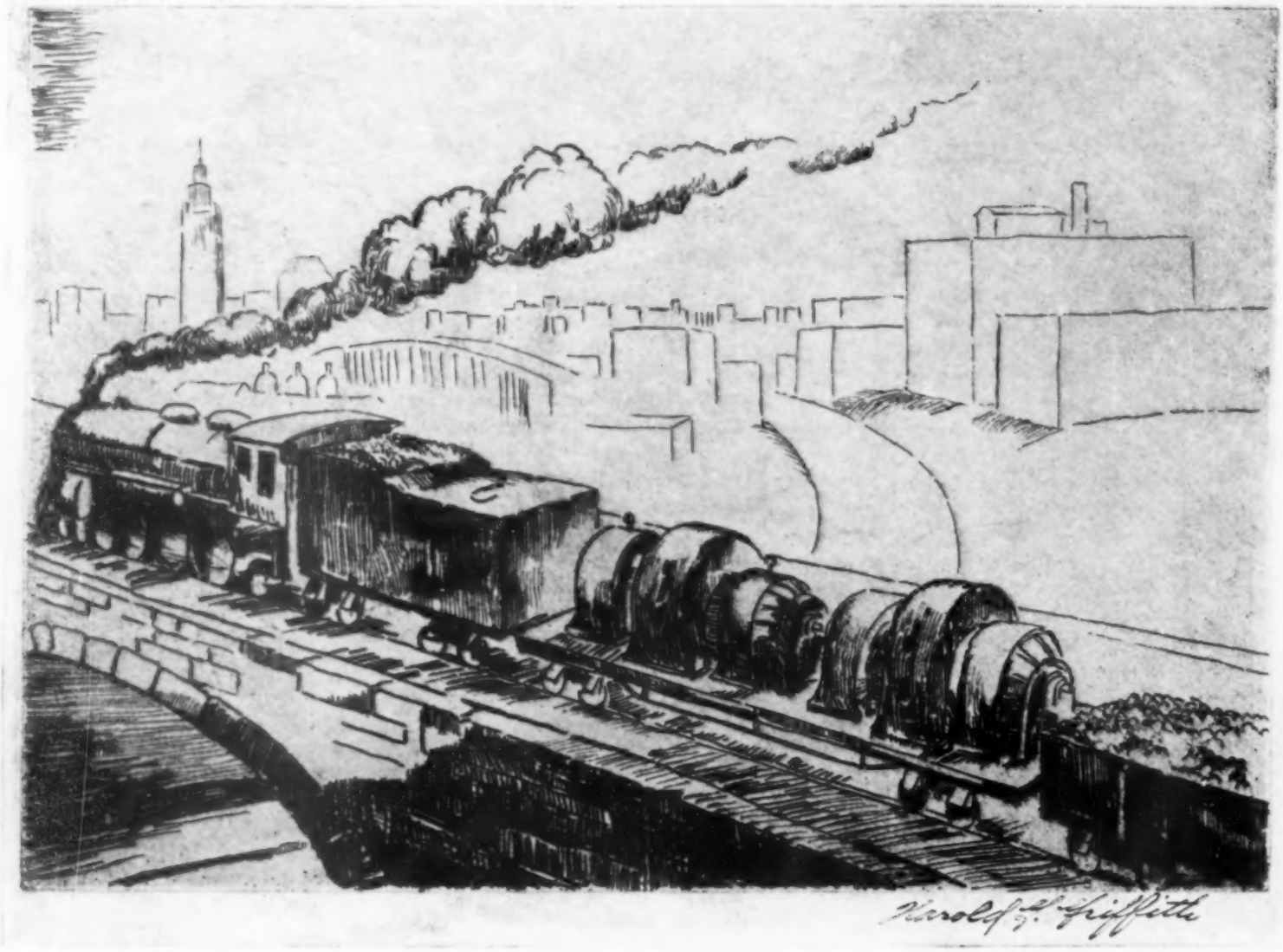
Seven additional examples of selling copy and a description of our fee system will be sent on request to interested bankers and business executives.

COWAN & DENGLER

ADVERTISING • MERCHANDISING • SALES COUNSEL

NEW YORK

IF YOU WANT
LOWER FREIGHT RATES



CLEVELAND, midway between New York and the Mississippi, gives minimum mileage for freight shipments in the world's richest industrial area. Every major decision of the Interstate Commerce Commission emphasizes this advantage. Mileage today is the largest single factor in calculating haulage cost.

¶Cleveland's position on the Great Lakes assures water freight handling of package and bulk shipments at the lowest rates known in the United States. As the center of a 500 mile circle the rim of which includes Montreal, New York, Norfolk, Chattanooga, St. Louis and Davenport, Cleveland offers manufacturers and shippers a haulage saving that frequently means the difference between purchase of their goods and those of a competitor.

¶For specific data regarding this and the other nine prime cost factors in business, write this Bank. ©G.T.Co

GUARDIAN
TRUST COMPANY
CLEVELAND, OHIO

RESOURCES MORE THAN $165,000,000

Office of Gaston F. Balme, *Vice-President,* G. E. Barrett & Co., New York

IN this age of specialization, there has developed a notable organization that makes it *their* business to study the physical requirements of *your* business. The service of the William F. Wholey Company embraces the planning of office arrangement, designing of interior architecture and decoration, selection of furniture and equipment, and the execution of every detail, under experienced *unified* direction. The recommendations of this staff are based upon a study of the nature and probable development of your business, the inter-relations of your departments, your present and future personnel, and the personalities of your major executives who should have private offices befitting their various duties and their individual tastes.

The William F. Wholey Co. Inc. ⟨*Equipment Specialists*⟩ 11 East 36 St. New York

Alfred Nelson Co

530 FIFTH AVE. N. W. Corner 47th Street NEW YORK

We are noted for making the finest strictly hand-tailored to measure *all occasion attire* for *men* and *cross saddle* riding and hunting *kit* for *women.*

SW&Co
A NATIONAL ORGANIZATION FOR CONSTRUCTIVE SERVICE

Scovell Wellington and Company

ACCOUNTANTS · ENGINEERS

10 East 40th Street, New York City

BOSTON CLEVELAND CHICAGO PHILADELPHIA
SPRINGFIELD SYRACUSE KANSAS CITY SAN FRANCISCO

ART IN INDUSTRY

In connection with the opening of their new first floor and the painting therefor of murals by Mr. Boardman Robinson, the Kaufmann Department Stores, Inc. of Pittsburgh, Pa. announces a prize essay contest on the subject "Art in Industry", the prize to be $1,000 and the prize-winning essay to be published in a forthcoming issue of FORTUNE. Among the judges will be Mr. Norman Bel Geddes, Mr. Joseph Urban, Mr. Edgar Kaufmann.

Rules of the Contest

(1) The Contest is open to anyone (excluding employes of Kaufmann Department Stores, Inc. or Time, Inc.) who submits an essay of less than 5,000 words which deals with some particular phase of or with the general subject of Art in Industry.

(2) The contest opened Saturday, May 31, 1930. All manuscripts must be in the hands of the Art in Industry Contests Editor, Kaufmann Department Stores, Inc., Pittsburgh, Pa., by midnight, Saturday, January 31, 1931. Manuscripts received after January 31 will not be considered.

(3) The prize-winning essay will be published in a forthcoming issue of FORTUNE.

(4) The essays will be judged by a committee which will include Mr. Norman Bel Geddes, Mr. Joseph Urban, Mr. Edgar Kaufmann.

(5) All manuscripts must be typewritten and have the name and address of the contestant in the upper left hand corner of each sheet of paper.

(6) Only one essay may be submitted by each contestant.

(7) Prize for the winning essay will be $1,000. In case of tie, each winner will receive the full amount of the prize. All information regarding the contest may be obtained from the Art in Industry Contests Editor, Kaufmann Department Stores, Inc., Pittsburgh, Pa.

(Signed)

Kaufmann Department Stores, Inc.

Fifth Avenue **Pittsburgh**

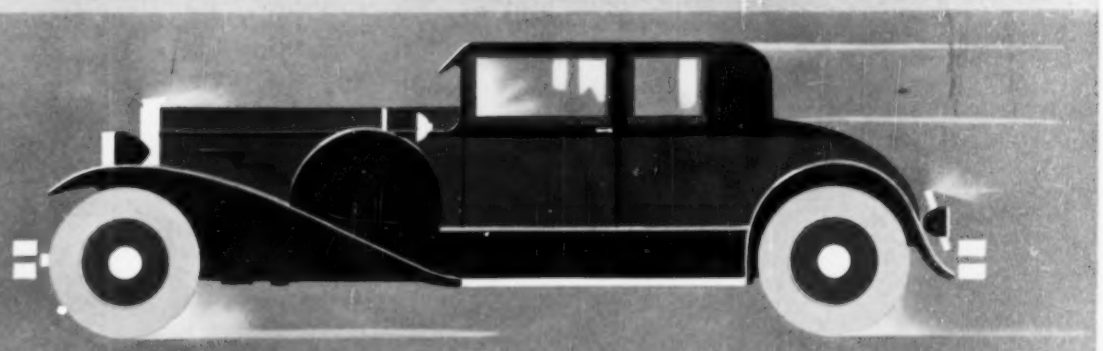
COROC

GAVE MOTOR CAR MANUFACTURERS
A DISTINCTIVE FINISH FOR
DISTINGUISHED MODERN CARS

COROC

*IS THE TRADE-NAME OF A VARIETY OF FINISHES FOR SPECIFIC USES, PLEDGED ALWAYS TO DO EXACTING JOBS PERFECTLY... AND ECONOMICALLY

COOK'S products have solved some of the most difficult finishing problems in aviation and in the automobile industry, as well as in many other industries which are exacting in their demands for finishes that stand up longest under the most trying conditions. ¶ Such a product is COOK'S COROC maroon finish, which for the first time provides a sturdy, durable, solid-covering **maroon finish** needing no special ground coats, as formerly required, and fewer finishing coats than previously necessary. Thus a manufacturer can now offer a model in maroon finish at no higher price than for ordinary colors. ¶ The COOK'S COROC label appears on a variety of special finishes, each pledging to solve a particular industrial finishing problem well.



A NEW MAROON FINISH

DIFFICULT AS THE REQUIREMENTS WERE, **COOK'S COROC MAROON FINISH** HAS SOLVED A DIFFICULT AUTOMOTIVE PROBLEM...JUST AS OTHER **COROC** FINISHES HAVE SATISFIED A VARIETY OF USERS

COOK

PAINT AND VARNISH COMPANY

Cook's paints, enamels, varnishes and lacquers long have proved **Best for Wear and Weather,** particularly to exacting industrial buyers requiring greatest serviceability, permanence and economy.

FACTORIES IN CINCINNATI, DETROIT, ST. LOUIS, KANSAS CITY, HOUSTON AND FORT WORTH • • • BRANCHES IN PRINCIPAL CITIES

ON A WET STREET
and the other car CRASHES

THE LIGHT

When a 10 foot stop will avoid an impact and 15 feet won't—that's when you want to know that you are on the tires that were made to hold in just such emergencies.

In those split seconds of tremendous strain, when the full responsibility for your safety rests on rubber, you fully realize the priceless value of that *extra margin of safety* in the *Dual*-Balloon.

Inside the *Dual*-Balloon are extra plys of soft cushion rubber. These built-in shock absorbers plus the lower pressure lets the whole tire grip the road with a closer clinging, double traction.

These softer riding features in the *Dual*-Balloon mean

something more important than the physical comfort of easier riding. Combined they mean the full measure of safety.

Safety in the freedom from running on risky rubber at high speeds. Safety in the ability to negotiate a sudden turn at straight-on speed when there is no alternative.

Safety in the ability to take hold and stop *just short* of an impact . . . *Skid-Safe!*

—goes a long way to make friends

20,000
40,000
60,000

Complete motion picture films (including slow motion detail) showing a series of non-skid tests of all types of tires on snow and ice and on wet pavement, will be furnished Automobile Clubs and other organizations for use in safety first campaigns. Car owners can obtain illustrated bulletins of these tests. Address your General Tire Dealer or the General Tire and Rubber Co., Akron, O.

THE WORLD'S SAFEST TIRE

The **GENERAL** *Dual*-**BALLOON** 8

Fly ONCE

IN A KINNER POWERED PLANE

THEN YOU WILL REALIZE HOW PRACTICAL IT IS FOR YOU TO OWN ONE

HERE is a vacation plane that makes New Brunswick or Bar Harbor an afternoon away for the New Yorker. Fly high over traffic, you will return refreshed, relaxed, ready for work ¶ In business too, *if time means anything*, you'll find one flying day will equal three of ordinary travel. The things you can do in a Kinner powered plane are as limitless as the sky itself. The places you can go depend only on the time you wish to take, for every hundred miles is a bare 60 minutes long. Figure it out as you fly ¶ Leading aircraft manufacturers have designed planes powered by the Kinner motor ranging in price from thirty-nine hundred to seven thousand dollars. All can be operated with the same economy you now run your car. Why not own one?

. . . The Kinner 5 cylinder aircraft motor is available in two sizes . . . 100 h.p. 125 h.p.

KINNER AIRPLANE AND MOTOR CORPORATION
GLENDALE CALIFORNIA

KINNER
AIRPLANE MOTORS

CAUSE

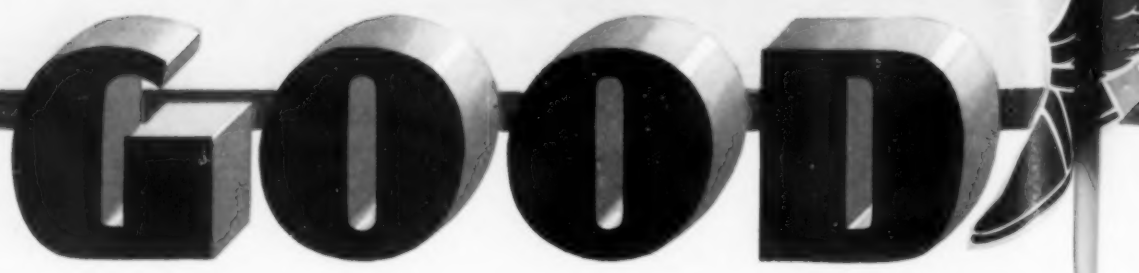
Faith precedes works; and in faith of the eventual usefulness of lighter-than-air transport, Goodyear some eighteen years ago first began to build balloons.

It was a brave undertaking for a company as new and as small, comparatively, as Goodyear was then. For many years there was scant reward except for victories in balloon races on both sides of the Atlantic.

But from the lessons of those early endeavors, and the faith on which they were based, Goodyear has gone steadily forward in its work of serving the future needs of the national defense and of transoceanic commerce by air.

Goodyear has already built 1,051 passenger carrying balloons, 123 airships of all types, and is now operating the largest airship dock and factory the world has ever seen.

P. W. Litchfield
President



RESULT

In this Goodyear airship factory and dock at Akron, the largest single-span structure in the world, are being built two great airships each nearly twice as large as the famous Graf Zeppelin. The building is 1,175 feet long, 325 feet wide, 211 feet high; and the Woolworth Tower and the Washington Monument could be laid end to end inside it and still leave ample clearance at both ends. The doors alone weigh 1200 tons each and roll on 80 wheels. In this gigantic housing, airships more than four times the size of the present U. S. S. Los Angeles can be built.

GOODYEAR

© 1930, by the Goodyear Tire & Rubber Co., Inc.

Luxurious Transportation

Sacred bullocks of milky white, drawing, with measured tread, the elaborately draped carriage of an East-Indian Princess, once meant supreme luxury in transportation along the holy Ganges

Many motorists have found that they can enjoy the luxury of Packard Eight transportation at no increase in expense.

They figure it out in this way: Depreciation is the one really important item of ownership cost. And depreciation on a car delivered at sixteen or seventeen hundred dollars and traded in after two years or so costs as much as on a Packard Standard Eight driven some three years. This is a fair comparison because most Packard owners do keep their cars far longer.

As to operating and maintenance costs everyone knows they are no greater for a Packard Standard Eight than for any other car of like size, whatever its price.

Here, then, is the real secret of enjoying *luxurious transportation.* Buy a Packard Standard Eight and keep it a little longer than has been your custom with lower-priced cars. You gain the advantages of unchanging Packard beauty, Packard comfort, performance and prestige—and your ownership costs are no greater.

PACKARD

ASK THE MAN WHO OWNS ONE

Volume 11

Fortune

Number 2

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Courtesy Richard Hudnut

PERFUMERY WAS A MATURE ART IN THE TIME OF THE PTOLEMIES. "EGYPT"
—A GEORGE BARBIER DRAWING FOR A HUDNUT BROCHURE

Cosmetics: The American Woman Responds

To an infant industry which here passes in review. It sells beauty, delivers good looks. Statistically exaggerated, its future is nevertheless in the billions. How it concerns Home & Husband. The advertiser's study of desire.

WHAT sort of woman does a man want? Limit the question. Ask: "How does the average American male want his woman in the year of grace 1930?" He does not want her beautiful. Such a dogmatic statement may seem incredible, but the evidence is overwhelming.

There is scarcely a beauty to be found in the current fiction of the *Saturday Evening Post*. There used to be. When Editor George Horace Lorimer was younger and corsets were in flower, he satisfied the sublimated desires of American manhood by a raving, stunning, spotless, golden beauty several times per issue. Now, however, his stories read: "Mary couldn't honestly be called beautiful . . . A mouth too big for beauty . . . turned up nose . . . swims three miles . . . But somehow every masculine eye turned toward her as she entered the room."

Yet nothing is newer than the beauty business. Unnoticed, or at least unmentioned by Presidential Candidates reciting the story of U. S. prosperity, the beauty business has swept the country in the last decade with a speed and volume no less astounding than radio, refrigerators, or road-building. It is definitely an infant industry. Nor has its progress been merely the obscure racketeering of designing or desperate women who set up beauty shoppes. It has been capitalized on Wall Street. It currently provides the principal revenue of American magazines. And Macy sells three items of cosmetics for every pair of shoes.

What, then, is this beauty business? In the first place it is big, but not nearly as big as it is thought to be nor as big as, in all probability, it is soon likely to become. Those who desire a true understanding of America must reflect that we have more automobiles than bathrooms. Similarly, not more than one woman in three uses a tooth brush. Something more than that use powder —probably 15,000,000 out of 40,000,000 women of powder age. (Sears, Roebuck powder sales are double its tooth paste sales.) Roughly we may say that some 10,000,000 or 11,000,000 spend less than $30 a year each on their looks (including teeth). Thus the beauty business principally concerns some 4,000,000 women who probably average more than $100 per year. Nor is this business as big as beauticians themselves claim. These ladies and gentlemen are addicted to purple superlatives and can scarcely be expected to give a reasonable account of their affairs. They allude to their skin treatments as "utterly unique." They describe a new scent as "breathing the ambrosial glory of the ancient gods and goddesses." Similarly they like to inject the phrase "$2,000,000,000" into any discussion of their activities.

This $2,000,000,000 is an appalling exaggeration. Let us leave the beautician's extravagant dream world. If he were not given to rhetoric he could be quite impressive with the simple, honest statement that the United States has become in the last decade by far the largest producer of toilet preparations in the world. Despite the fact that no laboratory has ever devised methods which will

(1) really remove wrinkles or rejuvenate;
(2) really prevent shiny noses;
(3) really grow hair or remove it permanently and inexpensively;

the total wholesale value of perfumes, cosmetics, and other toilet preparations produced in the United States in 1929 was about $250,000,000. Add 50 per cent to this figure for distribution and profits, then double that total to account for personal services rendered by beauty shops, and you will arrive at an approximate fiscal symbol of the U. S. beauty business—perhaps $750,000,000, of which, probably, more than half is spent by some 4,000,000 out of America's 40,000,000 women. That should be enough for beauticians to brag about. But they will ever be hyperbolical.

But why should women rush to beautify themselves at such cost at the very time when men for whom they wish to be beautiful have evidently abandoned the cult of Beautiful Women?

This paradox is easily reconcilable. Men have merely become reasonable in their demands at the time when reasonable demands may be satisfied. Men want women, not beautiful, but good to look at. Beautiful women are not available and, by definition, never were and never will be. The women of Keats and Shelley and Tennyson and Rider Haggard and Richard Harding Davis are fairy tales which occasionally come to life. On the contrary, a man may reasonably expect a woman to be good-looking. And it is the business of the beauticians to serve and to exploit women's national desire to satisfy this reasonable demand.

Actually, as observed above, few women do anything about making themselves more than presentable, if that. But many more

De Barron

ZIEGFELD CHOSE THIS BEAUTY . . .

International

. . . THE CONGO TALKS OF THIS

Courtesy Cutex, Northam Warren — Murray

Courtesy Peggy Sage

Liquid polish tints which may be applied to the finger-nails or, if one be beach-bound, to the toenails

do so now than ten years ago. And for this the beautician, with all his hyperbole and charlatanism, must be given credit by a grateful nation.

But not all the credit. Not even perhaps most of it. Health is the Great Beautician.

The latest big development in the beauty business is the recognition of this fact. The commercial beautician has gone over to Health bagpipe and baggage, loudly advertising Health as an ally and not a rival.

But while women have improved in looks by reason of the health-factor in American civilization, there have been other factors inimical to looks. The greatest is dirt. In New York or Chicago a clean face is rare. Soap and water are good cleansers, but it is easy for a woman to soap and scrub less than she ought to. The introduction of face-cleansing creams made women more conscious of the dirt on their faces. So, although soap is now as strongly advocated as cream, the cosmetician must be given credit for making faces cleaner whether by soap or cream.

Taking one step nearer "beauty," we come to the matter of Skin & Complexion. The American climate—dry, bright—is hard on both. Mist is good for complexions. Since the *Mayflower* the complexions of Americans of Anglo-Saxon extraction have become for nearly three centuries worse and worse. Now they are getting better. Health, of course, but also the beautician with his creams and face patters. Ask any old lady. She will say her granddaughter has better skin and complexion than ever she had. California, dry, sunny, is fullest of health—and fullest of cosmetics.

Having noted these few fundamentals, let us venture a few dogmatic statements concerning the development of the business.

The soul of the business is Advertising. The nature of this advertising is described on page 41. Here we may note that while some harmful preparations still exist, most of the unreliables have been driven out of business by national advertisers. The success derived from advertising one product has induced the development of a "line." Thus we shall see on page 35 how Coty began with perfumes and now includes nail polish. But the invention of new products is only part of the Advertiser's ceaseless study of desire. Noting suspicion in many quarters, the advertiser has gone out for medical support and got it. Noting that women are busy, the advertiser has developed preparations which the woman can manipulate in the fewest possible minutes. Noting that the heavy exoticism of the past few years is giving way to femininity as expressed in longer skirts and hair, the advertiser puts forth floral odors instead of oriental musk and amber.

This blue eye shadow and the raspberry lipstick underneath . . .

. . . and the lavender powder below which looks white by night and . . .

. . . this flame-tinted rouge are intended for the blonde who emerges at night in pastel chiffons or black satin.

A gypsy-tan face powder and an accent of tangerine for the cheeks of the lady who (*continued below*) . . .

Courtesy Pond's Extract Co.

. . . appears outdoors. Rubinstein also recommends, for her, brown eye shadow and a modest lipstick. With these, she will seem an inveterate country week-ender.

In the evening the brunette shadows her eyes with green and . . .

. . . touches her lips with geranium. She uses a greenish powder and a . . .

. . . rouge matching her lipstick, as stick and rouge should always do.

Below is daytime make-up for those persons who are neither blonde nor brunette. It includes gray . . . eye shadow, raspberry lipstick, and rouge with "Mauresque" powder—yellow rather than pink in tinge.

Make-up courtesy Helena Rubinstein

Astounding as it may seem, with all the elaborate and even ridiculous paraphernalia which has been created, the great word in cosmetics today is "naturalness." Cosmetics that look like cosmetics are no longer chic. Sun tan is dead. By the same token, lurid nail polishes are not likely to get anywhere—although America will certainly become, as never before, nail-conscious.

Along with "naturalness" comes "individuality." This is used to suggest that there are countless cosmetic possibilities, depending on the individual, and that only the high cosmetic priesthood can make them manifest. A priesthood thoroughly French in everything but fact. Thus the significant unit in the contemporary beauty business is the advertising office, intrusted with the maintenance of these psychological quintessentials.

Organization and exploitation are seen to have been primarily responsible for the burgeoning of the business. Not long could Wall Street ignore an industry, however sissified its implications, which annually dispenses in the United States some 2,000 tons of rouge, 4,000 tons of face powder, 6,000 tons of bath salts, 8,700 tons of vanishing cream, 9,000 tons of complexion soap, 17,000 tons of nourishing cream, 26,000 tons of skin lotion, and enough cold cream to displace the *Berengaria*.

Since 1922 U. S. cosmetic exports have exceeded imports, although the country exports only about 5 per cent of its production. France is still the leading exporter, disbursing twice as much as the United States. But it produces only one-half the amount, and the United Kingdom only one-eighth. Despite its proximity, Latin America acquires only some 25 per cent of its importations from the United States. This condition might be altered most favorably by one who could successfully combat the appeal which French goods make in these areas, the excellent credit terms allowed by French and German salesmen, and the local antipathy toward the United States.

Proud though an American may be that in the last decade the United States has outdistanced France at her favorite game, so great a future remains in the domestic market that the U. S. cosmeticians can afford to wait a few years before conquering the world. For surely Destiny is with them. They have on their side the heart's desire of 40,000,000 countrywomen. For rouge and lipstick (always in "individual" shade) are no longer concerned with the painted woman and man's baser passions. Nor do they serve merely to fetch a boy friend. The strongest cosmetic appeal today is: "Hold your husband." Which is to say that rouge and perfume, eye shadow and cream have become, in a word, the foundation of the Home. First to get a husband and then to keep him—if that be the function of cosmetics, then, indeed, what will American womanhood not pay per capita per annum? "A $2,000,000,000 business"—is it, after all, a reasonable forecast rather than an appalling exaggeration?

The Lure of Perfumes

Flowers & Whales & Deer provide woman's first and still most subtle accomplice. Gardens, nightingales.

IT WAS the peculiar boast of the late Lafcadio Hearn, Greek-Irish professor of English literature in the colleges of Japan, that he could smell the difference between a blonde and a brunette. This feat is quite beyond the capabilities of the average man, but one should remember that Mr. Hearn's eyesight was impaired and that the delicate, quivering nostrils which he inherited from his father were undoubtedly impelled to a compensatory activity. One should also bear in mind that olfactory adepts have long ago established the fact that the human body emanates seven separate odors, varying according to races, colors, and possibly creeds. (There is, we are told, the "odor of holiness.") In view of this, Mr. Hearn is not only absolved from any charge of braggadocio, but his achievement even loses something of its wonder.

Most persons, however, will rightfully regard it as a startling example of the sense of smell. No other sense has been so neglected. None is so generally unappreciated. The poverty of the average person's olfactory vocabulary proves this point. While innumerable adjectives are used to describe sight, sound, taste, and touch sensations, practically every nasal sensation is received with such generalities as "That smells good" or "That smells bad." Perhaps because the normal nose is not very apprehensive of fragrances but is keenly aware of stinks, the sense of smell has even acquired a certain disrepute. The person who reveals himself as an acute and active sniffer is apt to be regarded as somewhat indecent.

Yet everyone should be more than vaguely aware that the natural and the erotic pleasures are inextricably bound up with the sense of smell. Appreciated or not, it contributes vastly to man's stimulation and should therefore be recognized and cultivated as much as his other sensory equipment. The sea without its tang of salt would be vastly less exciting, and the shimmering hair of women adds to its tactile and visual seductions its characteristic scents.

These are elementary effects, obvious and appealing to anyone who will submit himself to them. They merely suggest the possibilities of odor, varied like the moods of music. And, like music, superior odors must be devised by an artist. The perfumer is that artist. He is, you will observe, the *only* artist working exclusively with the sense of smell. As such he is the most dignified figure in the beauty business.

The art of perfumery has undoubtedly been the subject of more prettified writing than any other human endeavor. This is due largely to its romantic implications and the euphonious names of many of the substances involved—patchouli, saffron, spikenard, bergamot, mimosa. "Let us surrender ourselves," sighs Richard Le Gallienne in a Hudnut brochure, "to the incantation of the mere word—perfume—for it is in itself a veritable attar of all the romantic experience of humanity. In it as in a little glass vessel

MATCHABELLI, THE PERFUMING PRINCE (ON EXTREME RIGHT), IS SEEN WITH CARL VAN DOREN, H. P. ("RUDY") VALLÉE, JAMES M. FLAGG

charged with the distilled essence of the souls of the moonlit roses of a garden in Shiraz, wherein, too, the songs of the Shiraz nightingales have become mysteriously blended, are locked all the perfumed memories of Time." And M. François Coty of the great house of Coty rhapsodizes: "Fragrances there are that tantalize, entreat, caress—others that sing of conquest and triumph—some that send up the incense of worship and some that sigh of infinite sadness. She whose entangling charm disturbs the sons of men will give it richer allurement in her choice of perfume—and she whose soul is questing will surround herself with the fragrance of inspiration. But delicately, delicately it must be done. Faint perfume in the hair, on the tips of the ears, a dash across the lips and hands, and sprayed on the garments—sachets in the apparel, the lingerie, chiffons, laces, handkerchiefs and gloves—fragrant powders for the face, the body—and each accent in the same lovely odeur blends into one swirl of fragrance that seems the soft and warmly sweet breath of the body itself." A favorite device of the blurb writer is to portray the toiletries of such historical and be-scented dames as Cleopatra and Marie Antoinette. This makes for heady prose, but sheds little or no light on the actual procedure of the perfumers.

The art is ancient. For in his Song, Solomon declared: "I rose up to open to my beloved and my hands dropped with myrrh, and my fingers with sweet smelling myrrh, upon the handles of the lock."

Flowers of Grasse

The natural elements of perfume manufacture have no more changed since Solomon's day than have the flowers and other vegetable matter from which they are derived. Artificial elements have been increased in accordance with chemical development. And it should be noted that not a scent sold to the public today is composed exclusively of natural extracts. But if you were making a perfume, you would begin with the flowers themselves. In the town of Grasse on the French Riviera, for example, there are shining perfumer's meadows of roses and jasmine, cool terraces of lavender and violets, orchards of orange trees dedicated to smell rather than taste. Amidst these are essence factories whose floors are heaped with blooms. The bodies of the natives and the breezes in the village reek with the breath of a billion blossoms. Annually Grasse utilizes more than 7,500 tons of flowers in the extraction of essential oils, which are products of plant metabolism variously derived from the flowers, leaves, stems, or barks, depending on the plant.

If you wished one pound of rose essence you would have to pick 500 pounds of roses. You might extract the essence by various methods. You could boil the roses until the essence passed off in steam (distillation). You could extract the essence from fats in which the roses had been bathed at a cell-shattering temperature (maceration). You could get the most valuable essence—absolute flower oil—by the volatile solvent method. In this system petroleum ether is filtered through the flowers in a series of hermetic cylinders, the last leading to a vacuum still where the ether is distilled off and used over again. The perfume remains in the still in the form of a "concrete" (perfume plus plant waxes). The concrete is shaken for hours in an apparatus called a "batteuse"; the perfume and some of the wax dissolves; the insoluble wax is filtered out. The perfume is then separated from the soluble waxes in an alcoholic freezing mixture, and the absolute flower oil removed from the perfumed extract by distillation in a vacuum. Some absolutes thus produced are worth $25 an ounce.

By these three methods—distillation, maceration, volatile solvents—you could extract the oils of most flowers. But if you were working with jasmine or tuberose you would spread their petals between glass plates coated with beef and pork fats which would absorb the essence (enfleurage). And if you wanted fruit essences you would obtain them by pressing the peels against sponges (expression) or rolling the fruits in hollow, spiked vessels which would collect the essence from the broken cells (ecuelle method).

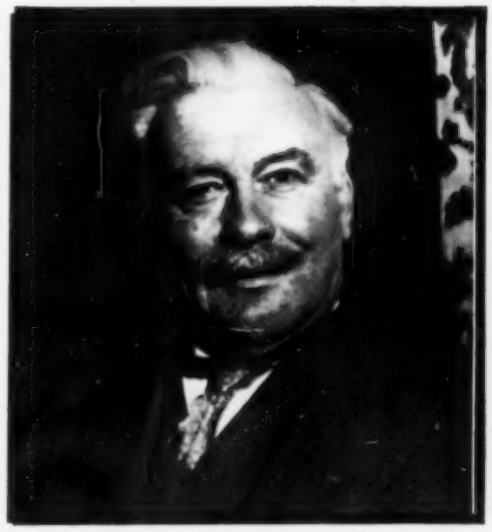
Let us now assume that you have extracted some rose essence. But a perfume must contain something besides the sweet, nostalgic exhalation of flowers. It must have a pungent, vitalizing element, which might be described as masculine, to stimulate and emphasize the floral femininity of the natural oil. You will get this element by using certain animal extracts about which the perfume copywriter says very little. He uses their glamorous names—musk, ambergris, civet, and castor—but he neglects to tell their derivation.

Ambergris, musk

And no wonder. If you want ambergris, for example, you must concern yourself with diseased whales. For this beautifully named substance is a calculus, like a mammoth gallstone, produced in the intestines of a whale which has acquired an intestinal complaint from eating too many fish. To get your ambergris, however, you may not have to disembowel a whale, as the mammals frequently expel the ambergris, which is later found afloat in the sea. The *Encyclopaedia Britannica* tells of one piece weighing 248 pounds which was valued at $66,000.

Perhaps you would prefer to tinge your rose essence with the odor of musk, so ancient that the details of its discovery are not recorded. In this case you must join the Chinese hunters who stalk the Himalayan and Atlas plateaus. The cloying, Eastern, aphrodisiacal scent of musk, rightly termed a masculine element, consist of a dried secretion from the preputial follicles of the male musk deer. The hunters remove and dry the entire sex gland, or musk pod, which they send eastward to be marketed on the China coast. You can obtain castor by a similar procedure with Canadian or Russian

M. GUERLAIN IS FAVORED BY WALES



M. GEMINET IS A PERFUME INVENTOR

MR. LEVY *IS* THE EXPENSIVE YBRY

Parfums de France
IN ESTEREL, ON THE RIVIERA, THE JONQUILS BLOW. SOON THERE WILL BE CARNAGE—SWIFT PICKERS AND PROCESSES WHEREBY THE ESSENCE OF THESE BLOOMS WILL BE EXTRACTED AT A VALUE OF $25 THE OUNCE

beavers, and civet by collecting a glandular secretion of Abyssinian civet rats.

But even with rose essence and animal extract, you would not have a satisfactory perfume. Essence is very expensive, and there is very little reason why you should not use it sparingly, reinforcing it with the cheaper synthetics. Science has been very successful in artificially synthesizing the aromas which exist in nature. The chemicals rhodinol and geraniol acetate, combined, for example, admirably simulate the rose. Among the others are methyl heptine carbonate, which has the odor of violets; phenylacetic aldehyde, a product of cinnamic acids which fills the air with hyacinth; d-cresyl phenylacetate, from coal tar liquors, which smells like narcissus. There is also a substance called benzylidene acetone, which doubles for sweet pea, and one called gamma undecalactone, which smells like peaches. If you wish to accent your perfume with scents which have never been discovered in nature, science has devised and is devising many splendid originals.

And now only one element is lacking. You have a combination of natural floral essences, natural animal extracts, and synthetics. If this were all, the mixture would soon evaporate. To guarantee that your perfume will be lingering you must add balsams, gums, or oleoresins, which act as fixators by retarding evaporation. You might use benzoin, extracted as a sap by incising the bark of Siamese, Sumatran, and Japanese trees, or labdanum, a secretion obtained by the volatile solvents method from the leaves of the rock rose family, or storax, a balsam from the trees of Asia Minor.

Of these diverse substances, fetid or sweet, sharp or langorous, remote or commonplace, as old as feminine guile or as new as aviation, perfumes are compounded. They may be divided into several general classes; heavy oriental perfumes in which musk or ambergris are important; floral odors, in which the scent of one flower is predominant; bouquets, which are what the name implies. Manifestly, their manufacture requires boundless technical knowledge and experimentation. They offer opportunities for sensory achievement far above the perfumer's generality that heavy perfumes enhance brunettes and the lighter odors are adapted to blondes. For the master perfumer is quite willing that his art, tenuous and arcane, should be primarily devoted to love. But he keeps the belief that his, like all others, is an art of numberless significances. He wishes that more were equipped to perceive them. Occasionally a representative of one of the other arts has done so. There was Baudelaire. And there was Huysmans, whose hero Des Esseintes in *A Rebours* conceived, among other things, that the history of fragrances followed that of the French tongue.

Enter, America

If the art of perfume is old, so too is the business thereof. In the earliest days, the priest profited from his jealously guarded knowledge of aromatics. Later, as the demand increased, the perfumers began to import and export, and wily Carthaginians took spikenard from Arabia and myrrh from Egypt in their galleons to Trajan's court at Rome. In 1190 the first

association of perfumers and glove-makers was registered, and by the middle of the 16th century manufacture began in Grasse. In 1750 there were 250 perfumers in Paris, and under Napoleon (whose habit it was to douse himself with a bottle of eau de cologne after every bath) the perfume production attained a value of 12,000,000 francs annually. By 1830, many great houses flourished: Guerlain, Houbigant, Roger & Gallet, Pinaud, Yardley. All through the 19th century they peddled perfumes and toilet waters to the upper reaches of society, to actresses and women of the town. They used, as they do today, roses from Bulgaria, bergamot, lemon, and orange from Italy, lavender from England, sandalwood from India, jasmine, hyacinth, violet, and spikenard from France. It remained for the 20th century, and especially the American influence, to institute the first great change in perfuming in many a century—the giving of good, reasonably priced perfume to the middle classes (not yet, it must be remembered, to the masses). Actually perfume itself has become of relatively less importance as the general business of cosmetics has increased. Because everything is perfumed (powders, creams, bath salts, lotions) a woman has less need to daub herself with pure perfume. Whereas some $250,000,000 worth of cosmetic articles are sold annually in the United States today, perfumes account for only some $35,000,000. Nevertheless it is the perfumer who has been the nexus of the American-expanded beauty business. The most notable example is Coty, Inc., which we shall now examine in detail. And no matter how the position of perfume may vary with regard to the other elements of the beauty business, its ancient status as the most subtle of women's accomplices insures its business value, protects it from the vicissitudes of time.

M. Coty, Mr. Levy, Beauty's

Biggest business men. Americans acquire a world business in annual installments of $4,000,000.

BETWEEN them, and there are many things between them, M. François Coty of Paris, Montbazon, Louveciennes, Barbicaja, Scudo, and elsewhere, and Mr. Benjamin E. Levy, of Manhattan, have built up the largest, richest cosmetic organization in the world. Primarily they are perfumers, and so indispensable are Coty perfumes to the women of France that Coty never bothers to advertise them there. "We're dealing in necessities" is a favorite Coty slogan. It was only recently that the French company of Coty, about to market a new line of toilet preparations, decided to advertise at all. Truly, Coty of France is commercially great; it is to the French perfume world what Citröen is to the French motor world. But the real Coty animus is in the American Coty company, a young and amazing agency, created with lamp-rubbing facility by the genii Mr. Levy, which dwarfs its French forbear as completely as Ford dwarfs Citröen. With every resource known to modern advertising it sells Coty's twenty-three perfumes and a complete line of powders, soaps, bath salts, lotions, rouges, and creams, sells them so successfully that 36,000,000 women use Coty face powder. Of the $5,768,445 earnings reported for 1929 by the six Coty companies, approximately $4,000,000 net was earned by the American company. To this there came last year the astonishing if logical conclusion: the Levy-American company bought out M. Coty and all his European concerns. So that today the world's largest cosmetic enterprise is American, M. Coty remaining only as a thoroughly figurehead president.

But it would be a great mistake to extol the Levy-American aspect of the business if it meant disparaging the Coty-Parisian aspect. M. Coty, whose real name is François Joseph de Spoturno Coty, and Mr. Levy, whose real name is Levy, have few things in common. But there is one: they are both spirited and very able men. M. Coty should by no means be conceived of as some myopic, tripping French perfumer whose scents have been exploited, while he has been pauperized, by piratical foreign financiers. He is, on the other hand, a Corsican, born in Ajaccio in 1874, and it is significant that among his many lavish benefactions to the island is a grill enclosing the grotto where the greatest of all Corsicans used to meditate. There is certainly something Bonapartish about the perfumer which has nothing to do with his shortness or the fact that his grandfather, a military gentleman who was killed at Moscow, was second cousin to the Emperor's

Courtesy Saks-Fifth Avenue
LUXURY FROM LEFT TO RIGHT, CARON'S *ACCACIOSA*—$16. MATCHABELLI'S *DUCHESS OF YORK*—$18. VOLNAY'S *GERANIUM*—$12.50. VIGNY'S *GOLLIWOG*—$7.50. D'ORSAY'S *AMBER*—$35

father. M. Coty was raised, an orphan, by his grandmother in Marseilles. As a youngster he traveled to Paris, where he ran errands for the Senator from Corsica and later began experimenting with perfumery. In 1904, aged thirty, he perfected *La Rose Jacqueminot*, which may still be purchased at $3.75 an ounce. It was an immediate success, and, just to show that he was not a lucky bungler among his chemicals, Coty soon produced another, *L'Origan*. This—"The supreme achievement of perfume creation—evoking the image of delicate illustriousness, gleaming in surroundings of subtle elegances and soft luxuries—the woman of perfected poise and consummate social grace"—this was a ten-strike. The Coty people make the claim, which seems quite plausible, that more of this penetrating, amber-laden scent has been sold than any other on the market.

rarity. In Paris, on the other hand, the reputation of Coty grew apace. The armistice revels may almost be said to have been perfumed by Coty. And when the armies of the United States sailed for home, thousands of soldiers took Coty samples back to their ladies. Countless little clouds of scent floated into the New World; their vapors captivated its women and prepared a market whose gigantic possibilities have only recently become apparent.

At this point began the ascendancy of Mr. Benjamin E. Levy, who had been sole agent for the United States since 1910. M. Coty began to think that he had had enough of perfuming. To be sure, several of his finest projects had failed—he had been unable to transform the entire island of Corsica into a perfumer's flower garden; he had been unable to buy Chambord, long a country

and bought the paper. His editorials, presumably ghost-written, now applaud the Fascist cause. But since *Le Figaro* is read only by the genteel classes, in 1928 M. Coty founded *L'Ami du Peuple*, a so-to-speak tabloid of Fascism. Obtainable for the absurd price of two sous (less than half a cent), it sold 8,000,000 copies in its first month and infuriated some forty French publishers who had agreed on a minimum price rate of five sous per newspaper. There have been recriminations, insults, and lawsuits galore; M. Coty, with his ultra-modern policy of low prices, huge circulations, and plenteous advertising, has emerged from all these with better prospects than ever. *L'Ami* circulates to millions. He also owns the less notable and also Fascist *Le Gaulois*.

For a while M. Coty essayed politics. But his election as Senator from Corsica was in-

Keystone
M. FRANCOIS COTY OF PARIS INVENTED *L'ORIGAN* AND HAS MADE A BILLION FRANCS IN COSMETICS AND FASCIST JOURNALISM

Keystone
THE ENORMOUS AMERICAN COTY BUSINESS, DEVELOPED BY THE INSCRUTABLE MR. BENJAMIN E. LEVY, IS LARGELY RESPONSIBLE FOR M. COTY'S BILLION

Keystone
MR. ALLAN LEHMAN OF LEHMAN BROS., COTY'S BANKERS, SYMBOLIZES THE SUCCESS WHICH HAS ALLOWED COTY-AMERICAN TO BUY CONTROL OF ITS EUROPEAN PREDECESSORS

With the reception accorded to *La Rose* and *L'Origan*, their inventor was able to build a laboratory and factory at Suresnes-sur-Seine, just outside Paris, which is today a Coty village wherein not only perfumes, but glass receptacles, boxes, labels, and toilet articles are manufactured. The first and many subsequent Coty bottles were designed by Lalique, famed as the outstanding glass-worker of modern times.

The pre-War years were those in which M. Coty made his chief contributions to Coty. They may be said to be two: first, the Coty perfumes. Secondly, he did not ask too much, a policy which has been maintained. Many of the world's smartly groomed women will wear Coty's *Jasmin de Corse* or *L'Aimant* while quite able to afford the expensive essences of Caron or Ybry.

In 1915 the name of Coty was but a Parisian echo in the United States. Mr. Levy and his associate, Mr. Joseph Scanlan, patiently distributed, patiently advertised. Fifth Avenue shops began to handle the perfumes, but the American woman who possessed a flacon of *L'Origan* looked on it as a

seat of the Bourbons and the mightiest château in France, which he wanted to use as a perfume factory. But he had been reasonably successful. Clean-shaven, bright of eye, and red of hair, at fifty he seemed much younger and was still fiery with energy. And so he was quite content to turn to other things while Mr. Levy began to carry on the Coty cosmetic interests in such a way that M. Coty, with increasingly little more to do than clip coupons, became one of the few billionaires (in francs) of France.

Let us make a brief farewell inspection of this richest of actual perfumers before we concern ourselves with his successor. M. Coty has entered journalism—horse, foot, and dragoons. In 1923 he wanted to buy *Le Figaro*, the famous, dignified Paris daily whose columns have at one time or another contained the work of France's greatest men-of-letters, including accounts of social events in the Faubourg St. Germain by a young society reporter named Marcel Proust. *Le Figaro's* publisher, Edouard Calmette, said he would not sell it to a pink Socialist like M. Coty, who suddenly became anti-Communist

validated when numerous Corsicans testified that they had been paid to vote for him. When he offered 100,000,000 francs to start a national sinking fund which should be controlled by business men instead of politicians, the government rebuked him by accepting the idea and forming a committee upon whose roster the name of M. Coty did not appear. The attacks on the government and on world-wide Communism made by the vital and untutored, witty and ambitious M. Coty never seem to savor of idealism. He is a coruscating character, but always of the political, and not the philosophical, world. He owns pavilioned domains in France and Corsica, but prefers to live in Paris hotels. When the Young Planners wanted to meet in the Hotel Astoria they were informed that an old client did not wish to be disturbed by a lot of reparations experts. They went elsewhere, and M. Coty kept his peace.

Meanwhile, Mr. Benjamin E. Levy was agog in the United States. Materials were sent him from Suresnes-sur-Seine, and he assembled them in Manhattan. In a very

short while the demand at Suresnes was tremendous, and compacts and cosmetic packages in the famous orange and gold powder puff design were being produced there in unprecedented thousands. This mass production stands as the first distinctive contribution of the Levy forces to the Coty crescendo. Coty advertising kept pace. The ladies who encountered it everywhere were smartly persuaded of the obvious truth that various sorts of women required various sorts of cosmetics, that Coty was prepared to present such a variety as other concerns could not muster. Each woman would be provided with those cosmetics which the arbiters of Paris would have judged appropriate to her. This personal advertising stands as Mr. Levy's second distinctive contribution. And thirdly, merchandising was likewise smart. For not only did the American plants generate enormous quantities of all the Coty products, but the laboratories performed the very deft and chic feat of matching the Coty cosmetics with the Coty perfumes. Coty still does this to a greater degree than any other concern. You may purchase Coty's *L'Ambre Antique* not only in a bottled fragrance, but in toilet water, brilliantine, hair lotion, face powder, compact, talcum, or sachet. And this is true of the other Coty fragrances.

So it was that in 1925 the American branch of Coty was making twice as much money as all the other Coty companies combined. And then it was that the progressive, aggressive firm of Lehman Bros. got together with Heidelbach, Ickelheimer and Company and capitalized the American Coty business at about $11,500,000. Since the business made more than $2,500,000 that year, this was an extremely conservative capitalization and a great credit to the House of Lehman, which in that period gained a reputation for selling stock to the public at most attractive prices.

But actually only one-sixth of the company was sold to the public; to be exact, 50,000 shares at $37 per share out of a total of 309,300 shares (309,300 times $37 — nearly $11,500,000). The rest of the stock remained presumably with M. Coty, Mr. Levy, their associates and bankers.

The Lehman or the Heidelbach, Ickelheimer customer who paid $3,700 for 100 shares of Coty, Inc. has every reason to be thankful today. On this modest investment he has received handsome dividends, to wit:

1925—$380 (about 10 per cent)
1926— 500 (about 13 per cent)
1927— 600 (about 15 per cent)
1928— 821.50 (about 22 per cent)
1929— 878 (about 24 per cent)

We come now to August, 1929, to the very peak of the bull market. Striding triumphantly on, Coty-American had increased its profits from $2,500,000 to over $4,000,000. And the time had obviously come for Coty-American to run the show throughout the world. So, Coty-American made a deal with its father, M. Coty of Paris. In effect, Coty-American agreed to pay M. Coty and big

[*Continued on page 97*]

Elizabeth Arden: Queen

Who straps muscles, tones skin; and Helena Rubinstein, who does not. For each, some $700,000 net profit. Also Seligman & Latz.

ORDINARY cosmetic products—powders, creams, lotions—are all more or less alike. They require something such as the signature of a renowned *parfumeur* or a celebrated metropolitan beauty salon to give them a commercial advantage. We have observed the great international cosmeticists, like Coty, Houbigant, and Hudnut, who began with perfumes; now we shall look at others, particularly Elizabeth Arden and Helena Rubinstein, who have developed from luxurious, personal service beauty shops.

Black and white modernism on Fifth Avenue, gray stone and grilled balconies on the rue de la Paix, red brick on Old Bond Street and on Newbury Street—fashionably situated in most of fashion's capitals are the Elizabeth Arden salons. On the Calle Alcalá, the Lennéstrasse, the Via Condotti, in the Galeries Fleuries, the Book Building, the Casino Block, and Job's Lane they stand, with solicitous, soft-voiced attendants and services equally ingratiating.

Usually such glittering, costly plants depend for their existence on the outside sales of the products whose reputation they have established. Thousands of women who have never been in an Arden salon buy Arden products in the more respectable drug and department stores all over the country. But it seems entirely probable that the Arden salons, alone of their kind, pay their own way. In the United States they enjoy a refined and enthusiastic Junior League clientele; elsewhere they have rapidly attracted the prosperous. But it would be folly to suppose that this condition even approaches permanency, that Arden has a timeless secret. Arden is the vogue at the moment. But let some new beautician appear with new and attractive mannerisms, and her name will usurp the place of Arden in the boudoir gossip of the big cities. Then the Arden salons will, like their rivals, be functioning chiefly for the benefit of Sioux City and points east and west. Helena Rubinstein once held a position analogous to Arden's, and Kathleen Quinlan is making a strong bid to displace her.

But, you ask, what is there about these super-beauty shops which makes their products seem so desirable to outlanders? Why do their names give repute to a cosmetic product? Let us examine Arden's New York salon in an attempt to answer this question. Behind every institution of this sort is a simple physical fact—most people like to be handled. They squirm with delight when their backs are scratched, their heads stroked, their feet rubbed. Elizabeth Arden takes magnificent advantage of this fact. She offers innumerable treatments, involving all sorts of slapping, prodding, tickling, laving, smoothing, and vibrating. She has about 100 preparations, from Venetian Puffy-Eye Straps to Venetian Anti-Brown Spot Ointment, all of which can be applied in a veritable orgy of handling. If she wishes, a woman may enter the discreet portal of Elizabeth Arden's and be continuously handled for four hours. Combine this sensuous bliss with the client's conviction that she is being beautified by a wizardry peculiar to Miss Arden, and you obtain some idea of the appeal which the

U. & U.
ELIZABETH ARDEN WITH SALON KEY

Arden salons exert upon those who are in a position to patronize them. But manifestly this handling does not affect Mrs. John Citizen of Sioux City. If Mrs. Citizen wants to have her back scratched or her hips kneaded, she has no Arden scratchers or kneaders to do it for her. And, as everyone knows, there is no fun in pinching one's own cheeks or pummeling one's own haunches.

The same thing applies to the Arden exercise and tap-dancing curriculums. In order to exercise at Arden's a woman must present her doctor's certificate of permission. She is then examined and photographed schismographically (a silhouette picture on graph paper) which reveals the exact extent of every unfortunate billow or hollow or curvature. Dietary advice is given and exercises prescribed. These take place in rooms fitted with full length mirrors, calculated to remind the client of her convex or concave failings. A specially trained attendant, skilled in the Swedish massage, dons a short Grecian tunic and conducts the ceremonies to the music of a phonograph. Eight exercise lessons (perhaps an hour and a half apiece, including massage and shower) cost about $50. In addition, most of the exercisers are persuaded to buy a special exercising costume which resembles a gray one-piece bathing suit ($5.00) and a waterproof satin camel's hair exercise mat ($65). Not until a client's figure has begun to show the effects of her routine, not until she exhibits a certain proficiency in her exercises, is she allowed to purchase phonograph records which will enable her to exercise at home. The robustious young lady who directs this department emphasizes the psychological angle—a good figure makes for a contented mind. She uses the word "happy." The tap-dancing classes are similar in theory—the client pays something for the instruction and considerable for the trappings that go with it, in this case scant black satin trunks, an orange-yellow blouse, black strap shoes, and white socks that few women could resist.

But, as we have remarked, the lady in Sioux City does not attend these exercising lessons, which are perhaps more beneficial than anything Arden has to offer. Nor does she buy the exquisite Paris lingerie and other feminine accessories with which the corridors of the Arden salons are embellished. In Sioux City the Arden trade depends largely on the staple products of all beauty shops—make-up and materials for the facial massage. In the New York salon three or four floors are devoted exclusively to facials, performed in individual chambers by skilled administrants of the Arden Muscle-Strapping, Skin-Toning Method. A facial thus given requires one hour and costs about $5. But all the materials may be purchased in Sioux City at a considerable saving and applied by the purchaser in her Sioux City home. The method "consists of smart rapid patting following the line of muscles of face and neck . . . Patting is always upward, to

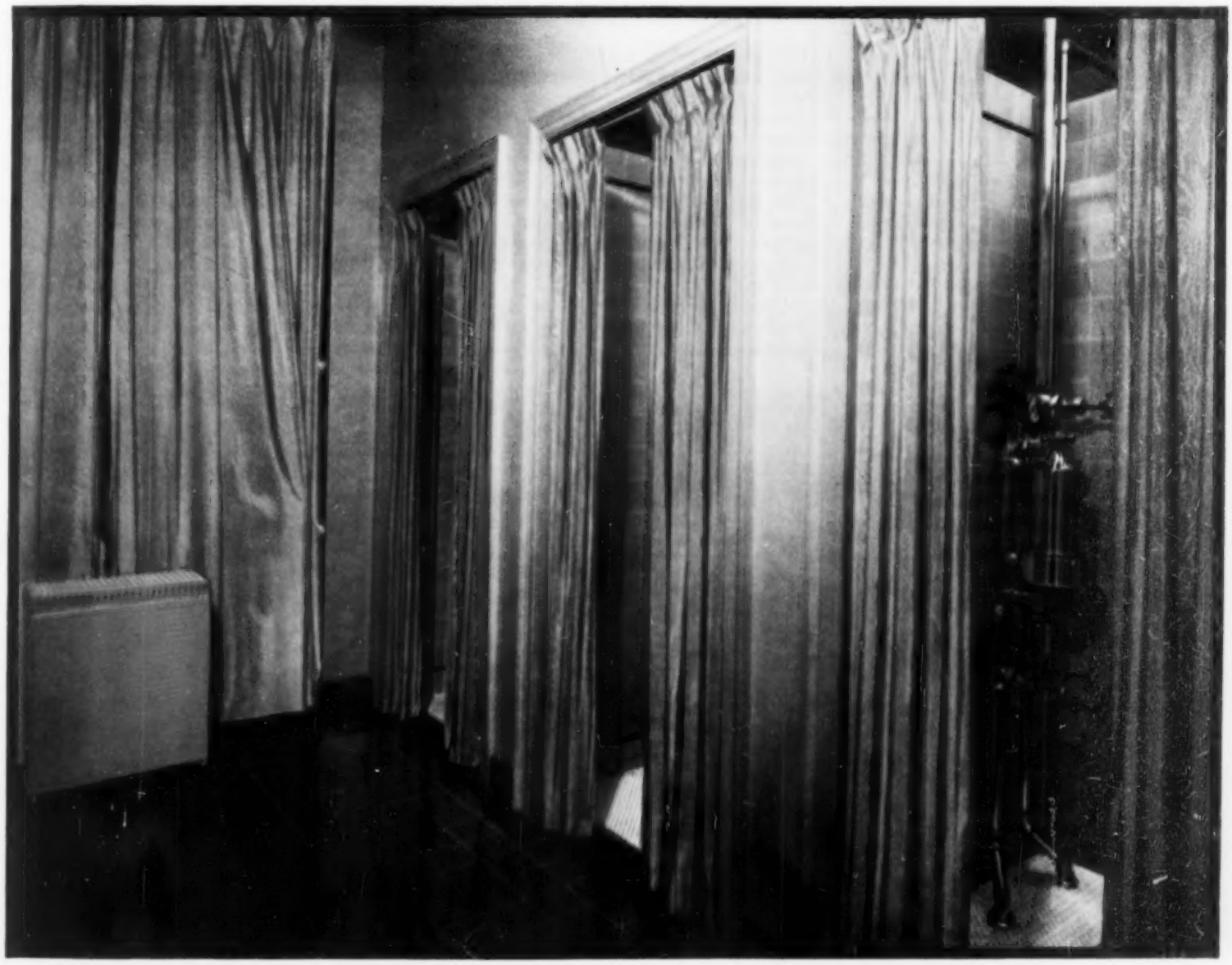
IN THIS EXERCISE ROOM AT ELIZABETH ARDEN'S, GREAT MIRRORS REMIND THE CLIENT OF HER BULGES

lift the muscles and overcome their natural tendency to droop and sag . . . It is done tellingly, to stimulate circulation and increase the functional activities of the tissues."

In the Arden salons this patting is accomplished by the fingers of the attendant. In Sioux City it is done by the pattee herself, using the Arden Venetian Patter ($5), a sort of fly-swatter de luxe. Arden counsels both Bedtime and Morning Treatments. As they are similar, we will describe only the Morning Muscle-Strapping and Skin-Toning.

First the face is cleansed, always stroking upwards, with a pad of absorbent cotton from which cold water has been squeezed and which has been dipped in Venetian Ardena Skin Tonic ($15 the gallon) and touched with Venetian Cleansing Cream ($6 the pound). The face is then dried with Venetian Cleansing Tissues ($.40–$2.25) instead of "harsh towels that stretch the skin." These operations should "awaken the tissues to normal, healthy functioning." The face, if full, is then patted with Ardena Velva Cream ($6 the pound). If lean, on the other hand, it is patted with Venetian Orange Skin Food ($8 the pound). After five or ten minutes patting with the fingers, the Cream or Skin Food is removed with the Venetian Cleansing Tissues aforementioned. Another pad of absorbent cotton is then dipped in cold water and squeezed out, saturated with Venetian Ardena Skin Tonic, hereinbefore referred to, and swabbed over the entire face and neck. Here the Arden Venetian Patter is brought into play for a few minutes, before a piece of ice wrapped in cotton is smoothed over the face. The face is then, for a third time, wet with Venetian Ardena Skin Tonic and dried with the familiar Venetian Cleansing Tissues. One should then "protect the skin" by applying that cream which is recommended for one's type—either Cream Amoretta (general, $1–$2), Cream Ultra-Amoretta (dry skins, $1–$2), Lille Lotion (oily skins, $1.50–$2.50), Crême de France (thin, sensitive skins, $1.25–$2.50), Ardena Protecta Cream (anti-sun and wind, $3). Rouge, powder, lipstick, eye shadow, and eyelash darkener may be added according to taste; Arden sells many varieties. Other things which may prove handy are June Geranium Bathodomes, Venetian Superbe Mits, or the Venetian Chin Strap De Luxe.

Some idea of the subtleties of Muscle-Strapping and Skin-Toning should by now be apparent. Unquestionably it is hygienic, healthy; unquestionably this is a distinction in the cosmetic world. Undoubtedly it has certain positive effects. Investigation has disclosed the fact that the complexions of American women are changing, growing drier, darker, and, unless one is careful, dirtier. Muscle-Strapping and Skin-Toning probably do counteract dryness and dirtiness, may very well "preserve and restore the firm, round contours of youth." But it is doubtful whether Elizabeth Arden could



WHILE IN THESE BE-SCENTED SHOWERS SHE MAY REFLECT THAT SHE WHO ACHES IS ALSO SHAPELIER

demonstrate scientifically that her Method has any advantage over those suggested by her rivals or, indeed, over a simple home process involving plenty of soap and water and perhaps a cold cream.

And so, to determine the secret of Arden's out-of-town popularity we must look elsewhere than at the Method. And it seems quite obvious that the secret consists in an idea which is deposited in the heads of the Arden clientele. Those who visit the salons perceive that they are smart, learn that their treatments are fun and the results pleasing, if expensive. But those who are unable to visit the salons are persuaded, by the most high-flown advertising, that they are missing something precious and incomparable which, fortunately for them, is obtainable at a near-by pharmacist's. It is a process of awing those innumerable women who are susceptible to ultra-fashionable things. Lines from Arden's bravura advertising are illustrative: "I have seen pale opalescent women who have never lived . . . I have seen women who, like the eagle, have looked upon the sun." And in the opposite column: "Dip your fingers in muscle oil." It should be apparent that Arden does its awing proficiently.

Queen Elizabeth

Selling direct to some 3,000 American retailers, operating twenty-odd salons, Elizabeth Arden is said to have made $700,000 last year. Her reputed comment: "What have I really got? I can't even speak French."

Elizabeth Arden may feel a disability in this linguistic lack, may regret that she cannot pronounce the names of her French employees, but if it be true that chic emanates mostly from France then she has indeed a strong kinship with that country.

Courtesy Helena Rubinstein

For few women in America have as keen a flair for chic as she. By some occult foreknowledge she always seems to know, months before her competitors, when it will be fashionable to look artificial, when it will be better to look natural. She seems to read the future complexion of women in the skies. And the chic, needless to say, pervades the rarified atmosphere and the pastel corners of her salons. Women do not swoon, but they are most pleasantly lulled when they step into one.

The history of this tiny, dynamic, extremely feminine woman with the pretty, skillfully cosmeticized face will not be found in any books (though Elisabeth Marbury, it is said, is contemplating one) nor heard from many lips. Some think she is a native Canadian and rose a long way to attain her undistinguished social position. It is related that she was first an operator in a small beauty salon, then joint owner, then proprietress. The mellifluous name Arden is most probably a trade name although she has borne it ever since her present associates knew her. She has a Rolls-Royce and a Duesenberg and a chaste gray and silver apartment (recently converted from the lacey chi-chi kind). She has a house in Maine which Mrs. John Alden Carpenter is decorating (Mrs. Carpenter is also doing a series of department store salons for her.) One of her mannerisms is patting her face in the Muscle-Strapping fashion while she talks to you.

Extremely dominating and erratic, she examines every letter, every picture, every bit of advertising which leaves the office. Until recently she would dart about New York on unannounced visits of inspection. Ineptitude irritates her as it irritates any artist. She becomes completely miserable watching a clumsy student learning her business.

Perhaps her greatest friend is Elisabeth Marbury, famous liaison officer between commerce and society. From Miss Marbury she is supposed to have received much sage advice about her business. And she is frequently seen at Miss Marbury's rather strained receptions in her Sutton Place home.

Rumors have recently stated that Elizabeth Arden, like most of her rivals, has sold her business to Wall Street. But this does not seem possible to anyone who has ever observed this seething little person at work. Not until she wants something bigger than the Elizabeth Arden organization can its

DR. MAURICE AISEN HAD A "PSYCHIC SPLIT." AS A CONSULTING CHEMIST, HIS ADVICE WAS CONSTANTLY SOUGHT BY COSMETICIANS, YET HE DISLIKED COSMETICS ON THE LADIES OF HIS FAMILY AND KNEW THAT MUCH OF THE BUSINESS WAS NONSENSE. HE ENDED THE "SPLIT" BY DECIDING TO BUILD COSMETIC ILLUSION ON A SCIENTIFIC BASIS. NOW HE IS PINAUD'S HEAD CHEMIST

MAURICE AISEN

MR. CARL WEEKS WAS BORN ON AN IOWA FARM, WORKED IN DRUG STORES, AND DEVISED FACE POWDERS. HIS ARMAND FIFTY-CENT POWDER HAS BECOME FAMOUS. HE HIMSELF HAS BECOME RICH AND ONE OF THE MOST POPULAR CITIZENS OF DES MOINES AND THE COSMETIC WORLD

CARL WEEKS

HELENA RUBINSTEIN, ONE OF SEVEN RUSSIAN SISTERS FROM CRACOW, STARTED THE BEAUTY SALON IDEA. IN MANY LANDS HER SHOPS AND PRODUCTS HAVE PROSPERED. FOR SEVERAL MILLION, SEVERAL YEARS AGO, SHE SOLD OUT TO WALL STREET. IT IS REPORTED THAT SHE BOUGHT BACK HER BUSINESS, LAST FALL, AT A GREAT PROFIT

Blank-Stoller

HELENA RUBINSTEIN

mistress be conceived of as abdicating. And at present the organization is big and burgeoning enough to satisfy almost anyone's lust for work and dominance.

Although she is often brusque, often tactless, although like all vivid personalities she has her critics, her disparagers, Elizabeth Arden merits and frequently receives praise for having almost single-handedly created an outstanding business success. From Mr. Thomas Lewis, her husband, she received little assistance when she was first launching the venture. But she had (and has) a passionate belief in her own preparations, she was ready to tell the world about them—and did—and presently the world was buying them. In any complete list of successful American business women, Elizabeth Arden's name should be high in the first column (where by alphabetic rights it anyway belongs).

All over the country there are bureaus for beautification on the salon idea, from highfaluting city establishments to dingy myriads of small town beauty shoppes. Some of Elizabeth Arden's heaviest competition comes, for instance, from the department stores, which have been quick to welcome the salon. The firm of Seligman & Latz operates 103, each under the name of the department store in which it is located, with an annual business of $6,000,000. Filene's in Boston serves tea and cigarettes with its cosmetics. Famous-Barr in St. Louis makes up faces in a Tony Sarg village. Macy and Saks-Fifth Avenue in New York sell most of the better brands of cosmetics and dispense expert advice. Saks in addition runs the Silhouette Shop, dedicated to strenuous forms of reducing.

[*Continued on page 92*]

Big Beauty Business

Coty and Colgate, Procter & Gamble and Lever Bros.; Vadsco, Lehn & Fink and Pond's.

THERE is about the cosmetic business so much that is frothy and superficial, that the temptation persists to dismiss the entire industry as hardly worthy of attention from a serious financial standpoint. Yet such a standpoint would be both unfair and archaic. Last year the beauty business spent (together with its close relative, the Drug Family) more than $35,000,000 in magazine advertising space—$3,000,000 more than was spent by foods and $9,000,000 more than was spent by automobiles. It produced at least a half dozen companies with advertising appropriations of well over $1,000,000. It engaged the serious attention of at least one internationally prominent banking house (Lehman Bros.). It was not only a big business, but through a process of consolidation it was becoming a bigger business. The Man in Cosmetics might well be envied by the Man in Copper or by the Man in Coal.

Of Coty, Inc., as Big Business, with the subsidiaries, the funded debt, the complicated financing, and the other familiar accessories of corporate magnitude, much has already been said. Most of the other great beauty companies are, it must be admitted, primarily soap companies. But soap is constantly becoming more and more a beautifier and less and less a cleanser.

Greatest of American soap companies is Procter & Gamble Co., whose Ivory Soap, as everyone knows, is 99 44/100 per cent pure and floats. The company will celebrate its hundredth birthday in 1937, has paid unbroken dividends since 1891, and for the fiscal year ended June 30, 1929, showed sales of $193,296,721, with a net income of $19,148,934. Net for the last six months of 1929 was $11,639,820, and business during the present year has been so excellent that an extra dividend is widely talked of. J. P. Morgan & Co. has about a $20,000,000 stock interest in Procter & Gamble. Last year the company spent in magazines $4,127,230, with Camay complexion soap, endorsed by dermatologists, its most strictly cosmetic merchandise. Odd side line development is the contemplated use of green cottonseed hulls for fairways for Tom Thumb golf courses.

Aggressive Procter & Gamble rival is Colgate-Palmolive-Peet, with its new thirty-seven-story building on Michigan Avenue, and its consolidation of Colgate (founded 1806), Palmolive (founded 1864), and Peet (founded 1872) into a well-rounded organization dedicated to soap, dental cream,

[*Continued on page 43*]

U. & U.
SYDNEY COLGATE OF COLGATE-PALMOLIVE-PEET

Keystone
C. A. CORLISS OF POND'S COLD AND VANISHING CREAMS

Keystone
THOMAS J. McHUGH OF VIVADOU, KNY-SCHEER ET AL

Notes on Cosmeticians

Ranging from the giant soap company to the pygmy beauty parlor, the cosmetic business harbors every type of personality from the corporate organizer to the individual operator with a secret and precious formula. Chairman of Colgate-Palmolive-Peet is Sydney M. Colgate, heir of a business founded in 1806, a good round century before cosmetics achieved respectability. Before the Palmolive-Peet merger (July, 1928), eight of nine executive Colgate Co. positions were filled by members of the Colgate family. Head of Pond's Extract Co. is C. A. Corliss, who became wealthy as a partner of Thomas W. Lamont, who is now with the great house of Morgan. Lamont, Corliss handles Pond's and O'Sullivan Heels, heterogeneously but profitably. Thomas J. McHugh directs the destinies of Vadsco Corp., *née* Vivadou, discussed above. Viola Paris "does" beauty for *Vogue*, does also beauty columns for twenty-four newspapers. One of her columns circulates in Barbadoes. Ray Long is editor of William Randolph Hearst's *Cosmopolitan*. All-fiction magazines seem seldom to rate as great advertising mediums; do, however, corral much cosmetic advertising, perhaps because both fiction and cosmetics have much to do with sex. Of the approximately $4,750,000 which advertisers spent in the 1929 *Cosmopolitan*, nearly one-third went into "toiletries." Large *Cosmopolitan* advertisers were Bristol-Myers (Ipana tooth paste), Liggett & Myers (Rexall preparations), Lambert Pharmacal Co. (Listerine), and Colgate-Palmolive-Peet. So Mr. Long, great editor, is also great cosmetic salesman. Helen Martin runs the *Delineator's* beauty institute. Nearly all the women's magazines have beauty institutes which analyze cosmetic products, conduct the beauty department, and dispense booklets, in which advertised beauty brands are specifically recommended. Miss Martin carries coöperation with the advertiser to the point of conducting special consumer tests on products. Other beauty instituters are Ruth Murrin of *Good Housekeeping* and Hazel Rawson Cades of *Woman's Home Companion*. But the *Ladies' Home Journal*, which is not so aggressive in the beauty institute line, publishes the most pages of cosmetic advertising. Gladys Glad, one-time Follies girl, edits beauty for the New York *Mirror*, Hearst tabloid, on which her husband, Mark Hellinger, is a columnist. Advertising agencies with the best known beauty accounts are J. Walter Thompson Co. (Pond's and Lux) and Lord & Thomas and Logan (Colgate-Palmolive-Peet).

Tony Van Horn
VOGUE'S VIOLA PARIS

Keystone
COSMOPOLITAN'S RAY LONG

Tony Van Horn
DELINEATOR'S HELEN MARTIN

The Cosmetic Urge

The He-and-She Urge.—This urge presents a straightforward association between cosmetics and boy friends. A sample is Pompeian advertising:

> They call it glamour
>
> After years of casual friendship, Paul found his pulse quicken as his hand closed over Claire's—felt his senses stirred by the provocative fragrance which enveloped her.
>
> Claire had become glamorous . . . A satin film of Pompeian Beauty Powder in Naturelle—a touch of Pompeian Bloom in the Orange blend—she became a woman of mysterious, beckoning charm.

The Staying-Young Urge.—Here are sold cosmetics as fountains of youth. The new Colgate perfume, *Seventeen*, exemplifies this urge:

> We have our secrets, my perfume and I. At first you think it's so naïve . . . But what that perfume knows of life! It tells me the strangest things . . . sings of Youth . . . my perfume asks so much of me! I just can't disappoint it . . . I must be young and gay forever.

The Love Urge.—This is Victor Herbert's *Sweet Mystery of Life*, without the music. Elizabeth Arden demonstrates it at its most lyrical:

> Love is the secret of the universe . . . alone justifies life . . . better to cast your pearls of love before anyone, anything, than to keep them . . . only when one has been burned clean with the fire of love that knowledge comes . . . in love alone are all the heights and depths of joy and dreams and friendship.

The Endorsement Urge.—This is the testimonial technique incidentally applied to beauty products. Current endorsement campaigns include:

> Foreign beauty parlors approve Palmolive Soap. Dr. William Allen Pusey, editor of dermatologists' official journal, approves Camay Soap.
>
> Allan Dwan, cinema director, says, in behalf of Lux Soap, that "Smooth skin is always an irresistible attraction," and Lois Moran, cinema actress, says: "I always use Lux Toilet Soap to guard my skin. It is a lovely soap."
>
> Miss Virginia Carter Randolph, of Warrenton, testifies, for Pond's Creams, that "a Southern girl must have a lovely skin" and that "the ducky new [Pond's] Cleansing Tissues are perfectly divine."

The Natural Beauty Urge.—This ingenious urge conforms to the current admiration of apparently unstudied beauty. Yardley's soap advertising is built around it:

> This simple, effective English Beauty Treatment . . . the English woman is noteworthy for the few cosmetics she uses . . . but they bring her the unstudied, genuine, natural charm that is the first consideration of a gentlewoman.

The Vie Parisienne Urge.—Copy that speaks with a pronounced French accent is rather outmoded, remains dear chiefly to perfumes such as Lenthéric and Guerlain:

> La jeune fille et les fleurs—mais la femme la plus charmante sait que les fleurs periront et que le bouquet le plus éternel sera toujours un parfum de Lenthéric.

And Guerlain contributes:

> *Liu* is new . . . a rare and exotic perfume of Guerlain . . . absolute in its personality, unforgettable in its souvenir. To be enclosed in its aura is to be distinguished as a woman au courant with Paris, for in Paris *Liu* is a "succès fou."

shaving soap, and laundry soap. Palmolive, said to be the largest selling soap in forty-eight countries, has been advertised through endorsements from European beauty experts. Sales of $100,560,000 for 1929 were a few million off from 1928, but net of $8,910,000 was larger.

A third great American soap is Lux, made by Lever Bros. and claimed to be in more homes than any other advertised product. But the American Lever Bros. Co. is a subsidiary of Lever Bros., Ltd., of England, formed by the late great William Hesketh Lever, first Viscount Leverhulme, to whom Albert of Belgium gave a concession of 1,860,000 acres in the Belgian Congo. In September, 1929, Lever Bros. merged with the Dutch Margarine Unie and its British affiliate, Margarine Union, to form a company with a capital of more than $300,000,000. Lever Bros., Ltd. controls 200 companies; soap is but one of its many interests and Lux but one of its many soaps (others include Lifebuoy, Rinso, Pears, and the parent soap, Sunlight). But Lever Bros. in 1928 spent more than $4,600,000 in U. S. magazines and newspapers, advertised Lux chiefly with testimonials from cinema actresses.

Largest cosmetic companies are by no means comparable with the soap companies, though as soap has become so cosmetics may develop. Representative in their field are Vadsco Corp., Lehn & Fink, and Pond's Extract. Vadsco Corp. was originally V. Vivadou, Inc., makers of a long line of cosmetics. In 1926 the company acquired the Melba cosmetic preparations, popular-priced, of which the Federal Trade Commission this year ordered Vadsco to divest itself. Last year Vadsco further merged with Kny-Scheerer, makers of hospital supplies, and the American Druggists Syndicate. In 1929 Vadsco sales were approximately $10,500,000; net approximately $1,000,000.

Pebeco tooth paste, Hinds Honey and Almond Cream, Lysol disinfectant are the chief Lehn & Fink products, but Lehn & Fink also owns the Dorothy Gray Co., operators of an exclusive beauty shop and manufacturers of a quality cosmetic line. Lehn & Fink does not publish sales figures, but the 1929 net was $1,729,581. A magazine advertising appropriation of $1,118,568 well illustrated the selling expense incidental to the drug and cosmetic line.

Pond's Extract, Inc. is best known through Pond's Creams, Cold and Vanishing, advertising of which has carried the endorsement of hundreds of celebrities and near-celebrities. The company has not published sales or profit figures since 1925. Its 1929 advertising appropriation was in the neighborhood of $1,500,000. Like Lehn & Fink, Pond's, selling to the masses, has also a class subsidiary, having acquired the business of Kathleen Mary Quinlan, beauty salon operator with a distinguished clientele.

The soap companies gradually and the cosmetic companies almost exclusively are selling beauty, beauty, and more beauty. And certainly theirs is a product on which millions are cheerfully spent.

The Cosmetic Influence

Soaps (other than complexion soaps) sell the charm of smooth hands and the charm of unfaded apparel.

> She pays $780 a year (i.e., she has a maid) for nice hands—mine cost me next to nothing.
>
> *Ivory Soap*

> Lovely, soft, colorful underthings, lacy and shimmering—they make you feel so utterly feminine. Irresistible! And because you have confidence in yourself, you impress others—for confidence is contagious . . . Girls sometimes say, "It is so difficult to keep lovely underthings looking wonderful—frequent washings take away color and charm." But this will never be the case if you wash them always in Lux.
>
> *Lux Soap*

Laxatives (cereal or medicinal) sell the association between internal disorders and external imperfections.

> Your dining table can do damage your dressing table can't repair.
>
> Break nature's law and how soon the penalty is apparent in your face! How quickly your complexion confesses your neglect! How frankly your skin, your facial contours, your eyes, betray your default! . . . No wonder modern women take care to protect themselves against that great beauty destroyer—constipation.
>
> *Post's Bran Flakes*

> Beauty That is Envied Everywhere . . .
>
> . . . But avoid strenuous starvation menus. They often destroy beauty . . . Often [dieting girls] lose their color, the complexion becomes sallow and wrinkled. The reason for this is that most reducing diets lack roughage. Without roughage, the symptoms of improper elimination are inevitable.
>
> *Kellogg's All Bran*

Dentifrices have a leaning toward the medicinal approach, but some cling to the cosmetic basis. Thus Kolynos, the antiseptic dental cream, pictures a man edging away from a woman, says:

> Will he kiss her? NO!
>
> Germs sweep into the mouth with every breath and cause offensive bacterial mouth—ugly yellow teeth, stain, decay, and sore, spongy gums. You can't hide it from others, but you can remove it with Kolynos.

Antiseptics and disinfectants often interpret sanitation in terms of charm, run chiefly toward a negative approach in which the non-antiseptic becomes the repulsive:

> She Bags the Bouquets but never a Beau
>
> Many in Chicago society can remember when Mildred caught her second bouquet. The year was 1917 . . . Everybody was marrying; war, romance, and matrimony were in the air . . . But . . . the years rolled on . . . Whatever the cause, halitosis is an unforgivable social fault.
>
> *Listerine*

Gum might appear proof against cosmetic treatment, but not so:

> An Old Beauty Secret
>
> . . . Keep lips young, and you keep them pretty. And, one of the oldest and most inexpensive Beauty Secrets for this is merely chewing gum from the Sapota tree, the beauty tree of ancient Mexico, which is what you have in Wrigley's. Chew Wrigley's at least ten minutes a day. Note the added loveliness in texture and contour that gradually finds its alluring way to your lips.
>
> *Wrigley's Double Mint*

RUSSIA
700 MILES to MOSCOW
SAMARA
TRANS SIBERIAN RAILROAD
Volga River
ORENBURG
Sacked in 18th Century by Pugachez most famous, most terrible of Cossack Chiefs
Forest
Forest
Oil Fields
ASTRAKHAN
Noted for hats and fish.
K I R G H I Z
S T E P
ORENBURG - TASHKENT RAILROAD
CASPIAN SEA
ARAL SEA
Here are many Storms
Syr Darya River
The Hungry Steppe
Chu River
Rice
T U R K E S T A N
Sandy Desert through which Ghenghis Khan marched to fall upon Bukhara
ARIS
T U R K
LUGOVAYA
KRASNOVODSK
Amu Darya River (anciently the Oxus)
Soviet Troops drove out the last Emir in 1930. He took with him 250 Camels loaded with 30 millions in gold and jewels.
TASHKENT
Chief city of Central Asia. Center of $250,000,000 irrigation project under direction of Arthur Powell Davis
Oil Fields
CENTRAL ASIA RAILROAD
ASKHABAD
BUKHARA
COTTON BELT
Cattle and Fruit
SAMARKAND
Here Alexander killed Clitus. Here was born Tamerlane and here is his tomb.
KOKAND
AUDIJAN
MERV
Famed for its horses and its ruins. (20 square miles of the latter) Hindus, Parsees, Arabs locate Garden of Eden hereabouts.
1200 MILES to CONSTANTINOPLE
PERSIA
Hindu Kush Mountains
AFGHANISTAN
Pamir Mountains
INDIA

SIBERIA
WHEAT BELT
SIBERIAN RAILROAD
OMSK
Here Admiral Kolchak proclaimed himself dictator of Siberia
Population 115,000
Forest
NOVOSIBIRSK
Capital of Siberia
Population 120,000
1700 MILES to PEKIN
KUZNETSK
KUZNETSK BASIN
Here much coal and iron
Forest
Irtysh River
Coal
Copper
SEMIPALATINSK
Forest
Shatov's Northern Construction Headquarters
KARKARALINSK
Here rich magnetite deposits
MONGOLIA
"Mountains of Gold"
Herein many fish
greatest depth 36 feet.
SERGIOPOL
Salts
Forest
LAKE BALKHASH
Sandy Desert
CHINA
Province of Sinkiang
AINABULAK
Here Bill Shatov drove last spike in the Turk-Sib
CHOK PAR PASS
ALMA ATA
"Father of Apples" and Shatov's Southern Construction Headquarters
2600 MILES to SINGAPORE
Chu River
FRUNZE
ISSYK KUL
Coal
Tian Shan Mountains
Tarim River
Desert
Radium
KHOTAN
Here came Marco Polo noted its fine cotton.
The Geography of the
TURK-SIB
New (Soviet) Construction
Pre-Soviet Construction

The Turksib Is an Asiatic Monster

With head in Siberia and tail in Turkestan. A Chicago anarchist built it. Tartars, Kazaks, and Uzbeks operate it. It runs from Lugovaya to Semipalatinsk. It means more cotton to compete with U. S. cotton. And it is without question the outstanding job of railroad construction for many years.

THE tale of the Turksib begins with the tossing in the air of a large, fat anarchist. Those who tossed were members of the ancient tribes of Turkestan and the Kirghiz Steppe. He who was tossed was "Big Bill" Shatov, one-time I.W.W. agitator in the United States, one-time section hand on the Erie, one-time head of the Leningrad police force, and successively Bolshevik Secretary of War and of Transportation. His tossing was in the way of respect, not of mockery. He had done a big job, and the tribesmen were thus expressing their appreciation.

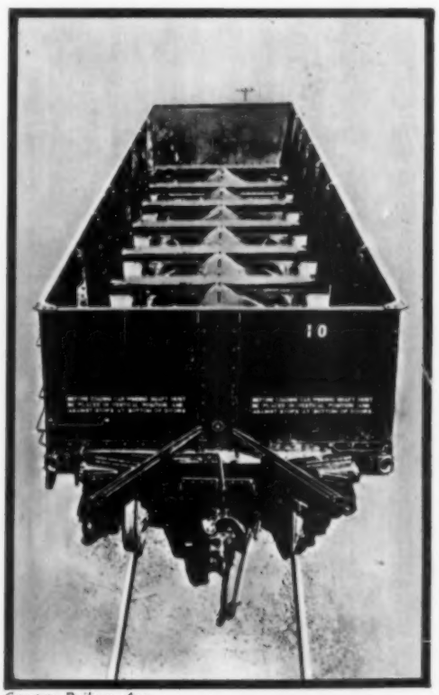
Bill Shatov had driven through remote deserts and wintry mountain passes the premier new railroad of the year, of many years. He and the 40,000 men under his command had completed the Turkestan-Siberian Railroad ("Turksib" in the clipped Bolshevik jargon). The Turksib is only 900 miles long, a Lilliputian stretch compared to the 8,000 miles of the Cape Town to Cairo railroad and to the 3,486 miles of the trans-Australian railway. But the Cape-Cairo is far from complete; its segments are separated by enormous gaps of jungle. The Turksib rails have met, and a train has lumbered over the whole line, though heavy freight must wait another year or so until the road is ballasted. Nor is the Turksib a pioneering road through virgin country like the African and Australian projects or like the old Central Pacific. Turkestan is one of the oldest lands in the world, with a culture going back thousands of years, and Siberia has been settled for generations. Turkestan cotton, Siberian wheat—these have been raised for centuries; the Turksib connects them. The Soviet considers it the greatest industrial exploit it has achieved so far.

The Turksib is the climax of Bill Shatov's brilliant career as an anarchist executive. Only one Soviet project outranks it: the Dnieper River hydroelectric plant, the dam for which is now being built by Colonel Hugh Lincoln Cooper, builder of the Muscle Shoals dam. One wonders whether the Colonel, too, will be tossed high in the air when his job is completed. Unlike the Colonel, Bill Shatov is no engineer. He is an executive. He was put in charge of the Turksib about a year after it had been started. At once he showed himself as able a master of men and money as any of the coal or textile barons he fought back in the States. He cut down the original estimate of $105,000,000 to $90,000,000 in actual expense. He put the job through almost a year and a half ahead of its original schedule, largely by overriding blue prints and red tape in a high-handed manner. No engineer, he did not hesitate to save time and money by drastically changing the engineers' route around a certain mountain range. Nature was a more stubborn opponent than red tape. Much of the route lay through desert

[*Continued on page 48*]

Courtesy Chicago Pneumatic Tool Co.

Amkino



Courtesy Railway Age

SOME AMERICAN TOOLS WHICH HELPED BUILD THE TURKSIB. CHICAGO PNEUMATIC DRILLS (LEFT) BROKE UP ROCK WHICH MARION STEAM SHOVELS (CENTER) SCOOPED INTO AMERICAN CAR & FOUNDRY DUMP CARS (RIGHT)

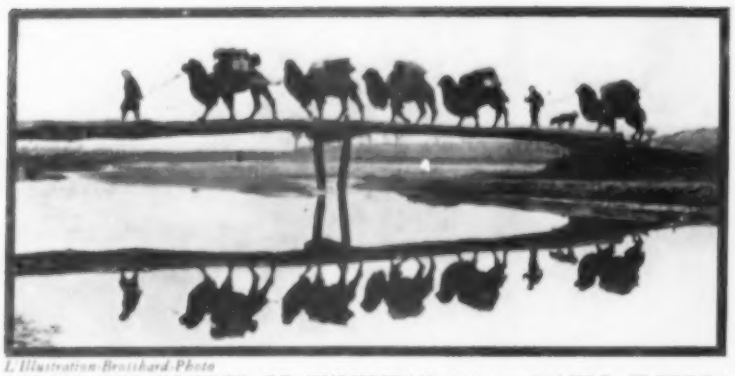
"WORLD'S NOBLEST PUBLIC SQUARE"—THE RIGISTAN IN SAMARKAND. PAINTED FOR THAT GREAT ORIENTALIST, CHARLES R. CRANE, BY GIGA GABOYEFF, WHOM MR. CRANE DISCOVERED

THE Turksib's tail is in Turkestan, where are the ancient, storied cities of Samarkand, Bukhara, Merv, Khotan. It was Lord Curzon who called the Rigistan in Samarkand "the noblest public square in the world," and it was Charles R. Crane who had it painted (see page 4). Sophisticated travelers will recognize the low building in the right foreground as the best restaurant in the city. Scholarly travelers will identify the gorgeous archway and tiled pillars in the center as the Shir-dar ("Lion in the Sun"), one of the colleges fronting the square. The oldest of these is that founded in 1434 by Ulugh Beg, learned grandson of Tamerlane. Outside the city is a great marble ruin, that of Ulugh's observatory, where, with cunning astronomical instruments that ran on metal rails, he revised the Ptolemaic tables of stars. One of the great centers of Asiatic culture, Samarkand has been sacked by the best people, notably, Alexander the Great (in 329 B.C.) and Genghis Khan (in 1221 A.D.). The greatest name associated with Samarkand is that of Tamerlane, who made the city his capital, building many a mosque and many a tomb, his own among them. Loveliest of his mosques is the one he built for his beloved wife, Bibi Khanum. To his architects he said, "One month to plan and one year to work. Great rewards for success and death for failure." After several batches of architects had failed—and died—the mosque was completed to Tamerlane's satisfaction, and he bowed down the builders with gold and silver. But after the epoch of Tamerlane the city fell from glory. In modern times it was conquered by the Amir of Bukhara, he whose summer palace the Soviet has ironically converted to an insane asylum.

Ancient is Samarkand, but still more ancient is Merv, which is surrounded by sixteen square miles of ruins. Here was once another great center of Moslem learning, here studied the historian Yaqut, here ruled successively Persians, Arabs, Turks, Mongols, and Persians once more, and here, Moslems still believe, was the original cradle of the human race. Today the ruins of Merv are silent and deserted. The lion and the lizard keep the palaces of Turkish sultans and Christian archbishops. Below are two of the most notable remains: to the left, a beehive-like reservoir; to the right, the noblest ruin of them all, the 12th century tomb of Sultan Sanjar.

Graham Romeyn Taylor

Graham Romeyn Taylor



L'Illustration-Brothhard Photo
ACROSS THE DESERTS OF TURKESTAN 200,000 CAMELS PLODDED WITH THE RAW MATERIAL FOR A RAILROAD

Amerino
AT THE OTHER END OF THE TURKSIB SLEDGES BROUGHT IN MANY A LOAD OF SIBERIAN TIMBER

Wide World
THE LAST RAIL IS LAID AT AINABULAK (SEE MAP), JUST EIGHTEEN MONTHS AHEAD OF SCHEDULE

lands over which 200,000 camels and many tractors laboriously carried tools and material. Shatov pushed the line through the wind-swept Chokpar Pass during the coldest winter Central Asia has known for fifty years. At one time, in the summer, 60 per cent of his engineering staff was down with typhoid.

The ceremonial tossing of Bill Shatov took place one day last April in a broad valley near the hamlet of Ainabulak. There the rails met; there Big Bill drove the final spike in his handiwork. All day there were games, wild and barbaric as in the days of Genghis Khan, whose horsemen once scoured these immemorial plains. Several thousand riders wheeled and maneuvered in the valley, charging in squadrons, wrestling each other on horseback for prizes of silks, sugar, tea, and the like. On the hill slopes were dotted like mushrooms the felt tents of the Kazaks. While the young men played their strenuous horse games, the older men, the women, and the children gathered in front of a red-draped platform. Emphatic, gesticulating Bolshevist orators boomed out Soviet platitudes through loud-speakers. Bill Shatov was decorated with the coveted Order of the Red Flag. Overhead a monoplane droned. Confronting each other in dramatic contrast across the double line of steel rails were the Marxian Socialists who had caused the road to be built and the barbaric nomads through whose country the rails were laid. To each group the Turksib meant different things.

To Kazaks: terror, fascination

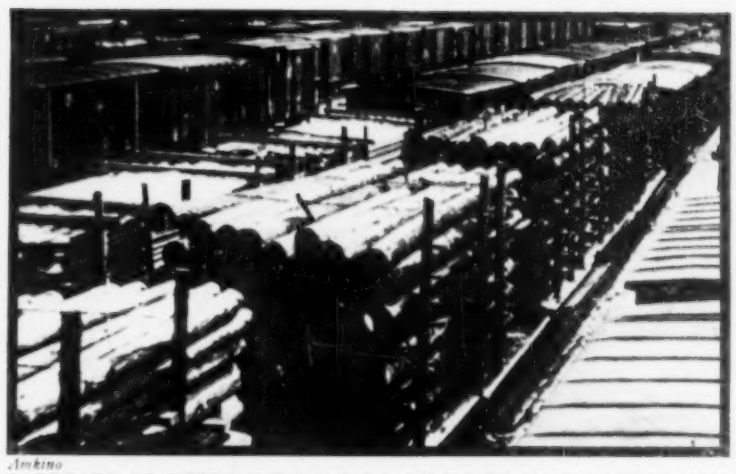
Behind any feeling a native might have towards the Turksib are centuries of history. He may live a nomad life on the vast, rolling Kirghiz Steppe or he may be a cotton-grower or cattle-breeder down south in Turkestan. Whichever he is, he can look back on millenniums of history. He is the product of the successive waves of Mongols, Huns, Tartars, Turks, not to mention a dozen more outlandish peoples, that have run over these ancient plains like slow-burning prairie fires. Since the days of antiquity camel trains have followed the "Golden Road" from China to the West, stopping at such storied centers of trade as Samarkand and Bukhara. When camel-drivers cry, "Get on, by Iskander!" they are invoking none other than Alexander the Great, who marched over these plains. Near Samarkand the Golden was born Tamerlane, and there he remains in a graceful blue-domed tomb watched over by a hereditary guardian. Over these steppes swept Genghis Khan and his horsemen in a yelling, plundering, irresistible horde to fall like a thunderbolt upon Bukhara, to make Turkestan a province of his mighty Mongol empire. Marco Polo traveled across the steppes as did De Quincey's celebrated

Ewing Galloway

International

Ewing Galloway
LEFT TO RIGHT A CAMEL-DRIVER OF SAMARKAND; BIG BILL SHATOV, OF CHICAGO AND LENINGRAD, BUILDER OF THE TURKSIB; A RUG-SELLER OF MERV

Graham Romeyn Taylor
MOSQUE OF TILLAH KARI IN SAMARKAND. THE FAITHFUL, WHEN THEY BOW TO MECCA, MUST HERE BOW SOUTHWEST



Amkino
CARLOADS OF SIBERIAN TIMBER READY TO BE HAULED OVER THE TURKSIB INTO THE HEART OF TREELESS TURKESTAN

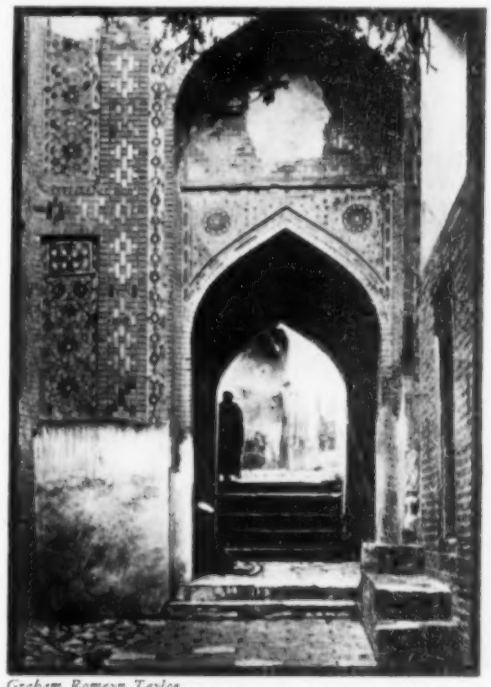
Tartar Tribe, known to every schoolboy. Merv and Bukhara were centers of culture with great libraries and hoary scholars long before America was discovered.

But Tamerlane has been dead, the universities have been ruins for centuries. They have left behind a conglomeration of fantastic races: Tajiks, Kazaks, Uzbeks—call a Uzbek a Sart, and you have delivered the last insult. There people live the life of their fathers and grandfathers in an obscure corner of the globe that once was important. The Turksib may make it so again, but the Tajiks and Uzbeks see it only as a new and strange way of getting from Alma Ata to Semipalatinsk. They are oblivious to political and economic implications. Some of them were amazed to hear from the engineers and surveyors that the Czarist government was no more. Many a Kazak fled into the boundless steppe away from the invading rails. And many thronged excitedly around the construction camps, looking on with the naïve interest of children. Such hardy spirits made up about a third of Shatov's 40,000 workers and after a trade school education will supply many a ticket agent and section hand to the new railroad.

To Bolsheviks: cotton, wheat

To the Soviet it is of little moment whether the tribesmen throng excitedly about the railroad or flee to the hills in dismay. Bill Shatov and his 40,000 did not build the Turksib in order to transport Uzbeks from Ilisk to Dzharkayn-Agach. The reasons for their building it are spread over the map on pages 44-45. At the northern terminus of the Turksib, in Siberia, is one of the world's most famed wheat and timber countries. At the Turksib's southern end is Turkestan, where fine cotton has been grown for centuries. The Soviet has spent some $84,000,000 in the last two years on cotton imported from the United States alone. Once Turkestan is sure of plenty of Siberian wheat, more and more land can be devoted to cotton. Along the banks of the Ili River a $250,000,000 irrigation project is now under way. Arthur Powell Davis, of Oakland, California, one-time head of the U. S. Reclamation Service, is in charge. His headquarters are at Tashkent, a modern city of wide boulevards and white mansions that has displaced ancient Samarkand as the chief city of Central Asia.

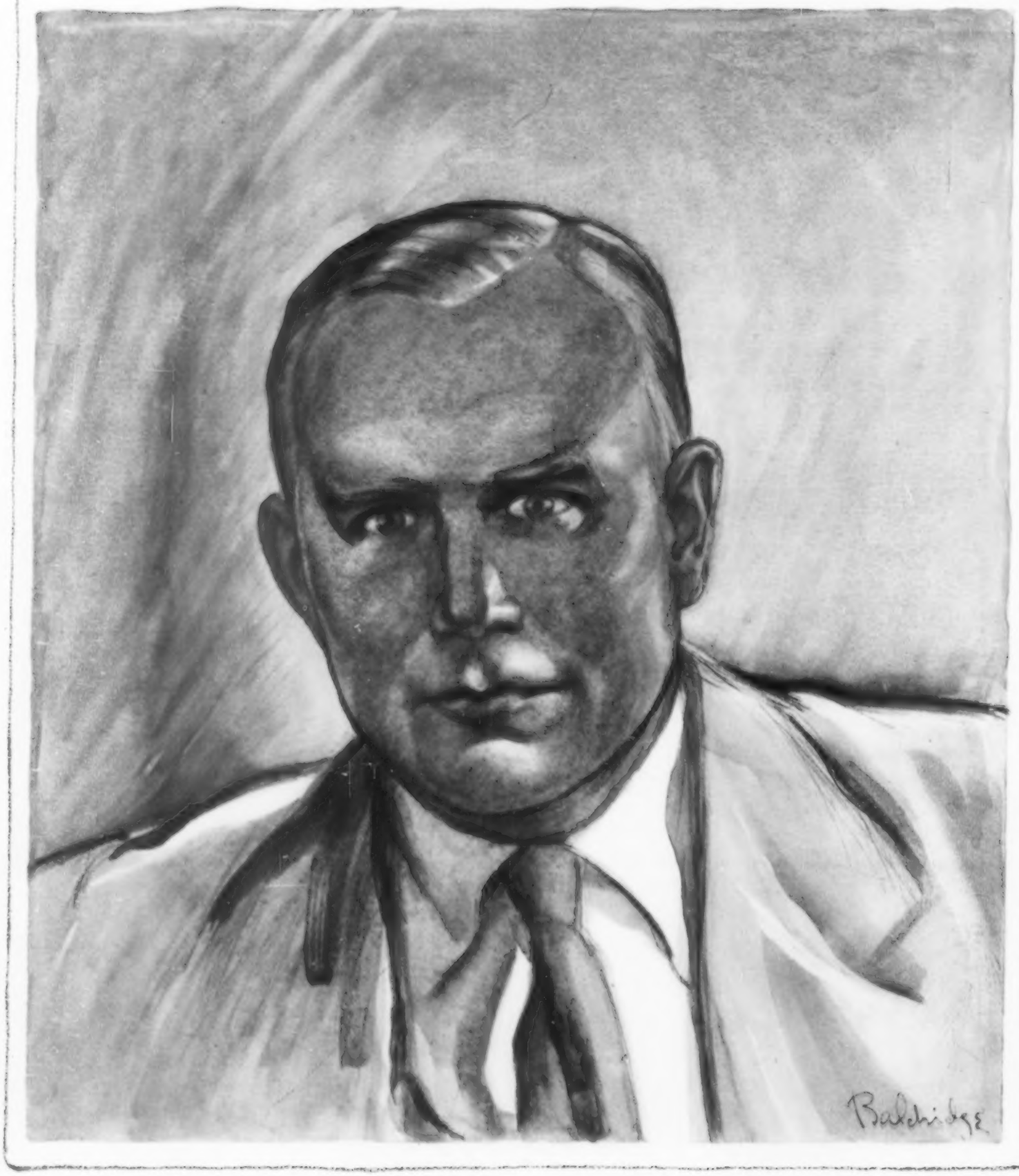
[*Continued on page 102*]



Graham Romeyn Taylor
BEHIND THE GATEWAY OF SHAKH-ZINDA IN SAMARKAND SLEEP THE DESCENDANTS OF TAMERLANE

Amkino

Amkino
THOUGH THE BUILDING OF THE TURKSIB INVOLVED NO ENGINEERING FEAT GREATER THAN PUTTING A 2,000-FOOT BRIDGE OVER STORM-SWEPT IRTISH, THESE ENGINEERS (LEFT) WERE "DEVIL WORKERS" TO THE KAZAKS (RIGHT)



PORTRAIT OF FLOYD LESLIE CARLISLE—*BY CYRUS LE ROY BALDRIDGE*

Add to Tycoons

Carlisle of Niagara Hudson, Mohawk Hudson, Northeastern Power, New York Edison, Eastern States Power, Power Corp. of New York, National City, Consolidated Gas, St. Regis Paper, United Corp., et al.

FLOYD LESLIE CARLISLE is a modest man who was born to be President. He chose public utilities rather than public office, so he will never be President of the United States. But though he is far from the White House, he has done very well with the Power House. He has indeed expanded beyond the confines of an executive and become an Interest. Financial writers include Mr. Carlisle (among others) when they talk of the Morgan-Bonbright Utility Interests. Liberals mean Mr. Carlisle (much more than any other man) when they talk of the New York State Power Interests. Chairman of Niagara Hudson Power Corp., director of Consolidated Gas, New York Edison, and United Corp., Mr. Carlisle is the outstanding New York State utility man and a considerable figure in the group of utility men dominant in the eastern utility field.

Mr. Carlisle is most emphatically a man of action. He is a large man with cold blue eyes and a firm-set mouth and the tycoon's characteristic abundance of energy. But he is also genial, slow speaking, unhurried, issuing suggestions rather than commands. He plays a great deal of excellent contract, in which he succeeds in being the actual player in much more than 25 per cent of the hands. Persuasive in argument, fertile in negotiation, he has an unusual capacity for enlisting other men in his army without jeopardizing his position as general. At Cornell he was president of his sophomore class. In his senior year, he was again class president. In between, he joined the debating society (whose seal he still wears) and here again became the presiding officer.

Nor has the habit of constant leadership ever deserted him. For a short time after his graduation from college he did occupy a comparatively subordinate position. He was at that time a lawyer (in his brother's law firm at Watertown, New York), and Watertown offered few opportunities for legal distinction. Indeed, the best remembered of Mr. Carlisle's accomplishments was his ability to get two members of the Watertown baseball team out of jail every Monday. The team, playing Sunday ball in defiance of the law, would begin its games with a dummy pitcher and catcher whose sole function was to be arrested as soon as they had thrown the first ball. With these malefactors in jail and the majesty of the law satisfied, the regular pitcher and catcher would appear and the game would proceed unmolested. On Monday Mr. Carlisle would appear at the jail, salvage the martyr battery, and repeat the same comedy the following week.

In 1910, however, Mr. Carlisle exchanged law for finance. Two Watertown banks were in a situation inviting consolidation and new management. It found both in Mr. Carlisle, who merged the two banks into the Northern New York Trust Company, of which he soon became president. As a bank president, and on speaking terms with Capital, Mr. Carlisle became interested in the waterpower (i.e., the hydroelectric) possibilities of northern New York and fixed an acquisitive eye upon the St. Regis Paper Co., which was squandering ample waterpower on the manufacture of nothing more ambitious than newsprint and paper bags. So Mr. Carlisle formed a syndicate which in 1916 bought control of the company. President under the new management was Floyd Leslie Carlisle. The paper business was by no means neglected, but power was particularly pushed. Other sites were acquired, the Northern New York Utilities Co. was purchased (chairman, Mr. Carlisle), and in 1926 the Carlisle holdings were consolidated in Northeastern Power Corp., with Mr. Carlisle, of course, at its head. Lying in the far northern section of New York State with no large cities in its territory, Northeastern Power was bounded on the west by the Buffalo, Niagara and Eastern Power Corp., controlled by the powerful Schoellkopf family, and on the south by the Mohawk Hudson Power Corp., sponsored by the even more powerful General Electric and United Gas Improvement companies.

But Mr. Carlisle was far from at the end of his road. In January, 1929, Bonbright & Co. and J. P. Morgan & Co. organized United Corporation, an utility holding company with a considerable interest in Mohawk Hudson. In July, 1929, Mohawk Hudson merged with Buffalo, Niagara and Eastern and the Northeastern Power in the formation of the present Niagara Hudson. To be chairman of the great new company was chosen none other than Floyd Leslie Carlisle. In 1928 Northeastern had had a gross income of $18,000,000; in 1929 Niagara Hudson had a gross income of $80,000,000; thus Mr. Carlisle, still biggest frog, was enjoying a much larger puddle. In April, 1930, he joined the board of National City; in May he was appointed to the directorate of Consolidated Gas—the first appearance of an up-State man on the board of the great down-State (New York City) utility. Furthermore, to accentuate his position as the New York State representative of the eastern utility group, he was also elected to the board of United Corp. itself. Along with him were named five additional directors, all (like himself) heads of companies in which United Corp. was interested. Inevitable, then, was the conclusion that the Morgan and Bonbright partners hitherto dominating United Corp.'s directorate had decided to give their outstanding operating executives an official place in their counsels, and that one such executive was emphatically Mr. Carlisle.

. . .

It is said that Mr. Carlisle, still in his twenties, thought in terms of large numbers and large compensations. Certainly he exhibits the capacity, the concentration from which success is fashioned. He rides and yachts, is little interested in motor cars or motor boats. He comes early to work, returns early to Great Neck, believes in no midnight labors, and delegates all possible duties to well-chosen subordinates. He belongs to the Congressional Golf Club; he has his life insured for $3,000,000; he gave the St. Lawrence University $100,000 to establish a forestry school; he is one of the syndicate backing the *Enterprise*, America's Cup yacht; he has four children and goes home every night; he publishes expensive advertisements selling the industrial advantages (especially low power costs) of New York State; he named one of his yachts *Revenge* and another *Avatar;* he says that he would not ride in an airplane if someone gave it to him.

But his chief distinction and his outstanding characteristic is his desire to manage and his ability to manage efficiently. After joining the Manhasset Bay yacht club, he decided that the club needed a new clubhouse. Encountering a difference of opinion on this subject, he maneuvered effectively and persistently until the anti-new-clubhouse faction suddenly discovered that Mr. Carlisle was club Commodore and the new clubhouse was being triumphantly erected. Sending his children to the Great Neck Preparatory School, he found that the school subsisted chiefly upon somewhat irregular donations from parents of its pupils. Approving of no such unbusinesslike arrangement, he reorganized the school into a corporation with the parents owning the stock. Now, prosperous, the Great Neck Preparatory School is widely known for the high salaries paid its teachers. As a little boy, Mr. Carlisle doubtless liked to take things apart and see what made them go. But putting things together and making them go would appear to be the major interest of his adult years.

Salt

The commodity that has not lost its savor. Its Fullers and its Mortons, its industrial versatility, and its extraction from rock and from water. With a note on Pepper.

SHOULD an American Gandhi start a "back-to-the-sea" movement in salt he would not worry the government, but he might annoy two families: the Fullers, of Scranton, and the Mortons, of Chicago. For the Fullers and the Mortons dig out or dry out considerably more than half the 5,000,000 tons of salt that American industry must use each year and American citizens eat. Mortimer B. Fuller rules "world's biggest producer" International Salt Co. as his father Edward L. ruled it in his day and as his son, also Edward L., will probably rule in his. Mortimer B. Fuller, Princeton '99, is a name to conjure with in Scranton. Mr. Fuller is suave, social, with a taste for horses and other classic diversions. Not so old Joy Morton, immemorial head of Morton Salt, "been in the salt business longer than any other individual." He is bald, hates it, and so wears a toupee. His father was Cleveland's Secretary of Agriculture, and his brother was Roosevelt's Secretary of the Navy and father of Mrs. Harry Guggenheim, wife of the U. S. Ambassador to Cuba, and of Mrs. Charles Sabin, ardent foe of prohibition. At seventy-five he is still boss of Morton Salt, which the Mortons own, and a pillar of Chicago society. One might say a pillar of salt.

Competition

While Gandhians gleefully make salt in India, the Fullers and the Mortons with even greater glee make salt in America. International in particular rejoices, for it seems to be entering on fat years after some very lean years in the past. Salt prices and salt prosperity depend mostly on "trade conditions," which means first and very nearly last: Competition. International and Morton get on well together, but there are many other salt-makers—sixteen of them are capitalized at over $1,000,000 each. From 1923 to 1928 a competitive battle royal was waged in the salt industry. As the fight grew fiercer International's earnings dropped lower, until the first six months of 1928 saw a net income of just $3,108. Then some companies dropped out, and International's net for the second half of 1928 shot up 11,000 per cent to $344,477. Trade conditions continued to improve, and International's net rose to $687,800 in 1929, the highest it has been since 1922. Company officials look forward to an equally happy 1930, perhaps to some extent because International gathered unto itself this April for $2,000,000 Sterling Salt. International reached one earning climax during the depression of 1921-23, and it looks as if it were approaching another during the depression of 1929-30.

Salt would thus seem to be a curious introvert among American industries, continuing on its way unaffected by penury or prosperity outside itself. Comparatively speaking, the salt business is good these days. Salt prices are not greatly depressed, though commodity prices are shaken to their foundations, though silk and sugar futures have been making new *all-time* lows on New York exchanges. A commodity which is so extensively used in industry as is salt must feel the effect of any general depression. But for the most part competition is the ruling factor in the salt business, which for this reason appears strangely sufficient unto itself. Thus salt has not lost its savor as much as most commodities today.

Fullers, Mortons

Complexly intertwined are the histories of International and Morton. In 1902 International, one year old, made Joy Morton & Co. into International Salt Co. of Illinois. Then in 1910 Joy, old even then, bought out International of Illinois and formed Morton Salt. The companies are still on good terms. Morton, which calls itself world's largest distributor of salt, is selling agent in the West for the rock salt dug up by International, which calls itself world's largest producer of salt. Morton produces no rock salt, which is the kind most used in industry, but believes itself to be the world's biggest producer of evaporated salt, used for preserving and seasoning food. Relative size is the only thing about which International and Morton quarrel. Being privately owned, Morton gives out no figures, but it insists that it is not eclipsed by International. Certainly the $10,000,000 at which its plants are capitalized is impressive, though International puts a value of $11,250,000 on *its* plants.

Mortimer B. Fuller believes in salt. He has a salt water swimming pool on the grounds of his estate outside Scranton into which every two weeks are dumped two tons of International salt. The water in his house is softened by a salting device. Outside of salt, he has been most interested in horses and Republican politics. Fanciers of saddle horses may remember his championship gelding, Amber Crest.

Joy Morton's most absorbing non-salt interest is trees. On his 2,000-acre place at Lisle, Illinois, near Chicago, he has a private arboretum (eventually destined for the state) that is said to be the largest in the country. Nearby lives his brother, Mark—gruff and also interested in trees. The brothers inherit their bent for forestry: their father, J. Sterling Morton, the former Secretary of Agriculture, founded Arbor Day. Brother Mark dresses like a farmer and takes little part in the family business, though he is still a vice president. Joy, however, still comes to the office quite regularly. Daniel Peterkin, treasurer and general manager, is the other and more active power in the company. Joy does not spend money uselessly, despises the stock market, and hence invests his millions only in industries he believes to be constructive. Thus he and Daniel Peterkin have put a good bit into the Teletype Corporation, of which Joy's son, Sterling, is president. Morton Salt is owned chiefly by Joy, Sterling, Mark, and Peterkin. None of them seems to know who conceived the famed slogan for Morton table salt: "When it rains, it pours."

Salt in industry

Salt is to industrial chemistry as copper is to electricity. It is the base of the vital alkali chemicals. From salt come the sodiums (sodium sulfate, soda ash, caustic soda, etc.) and the chlorides (hydrochloric acid, chlorine, etc.). And here should be mentioned the Pennsylvania Salt Manufacturing Company, which manufactures no salt. Though Pennsylvania is bigger than either International or Morton, though it has been in business since 1850, it has only an incidental place in an article on salt. For it is a maker of heavy chemicals rather than of salt. It gets its salt in solution from many a brine well in Michigan—but brine is not salt.

Industrially salt is used . . .

. . . By meat packers and fisheries as a preservative. The salt enters the cells and dries them out, thus making it impractical for bacteria to exist therein . . .

. . . By ice cream makers, etc. as a refrigerant. Salt plus ice is colder than ice alone because the salt draws heat into the ice. This melts the ice, but cools off the object being refrigerated . . .

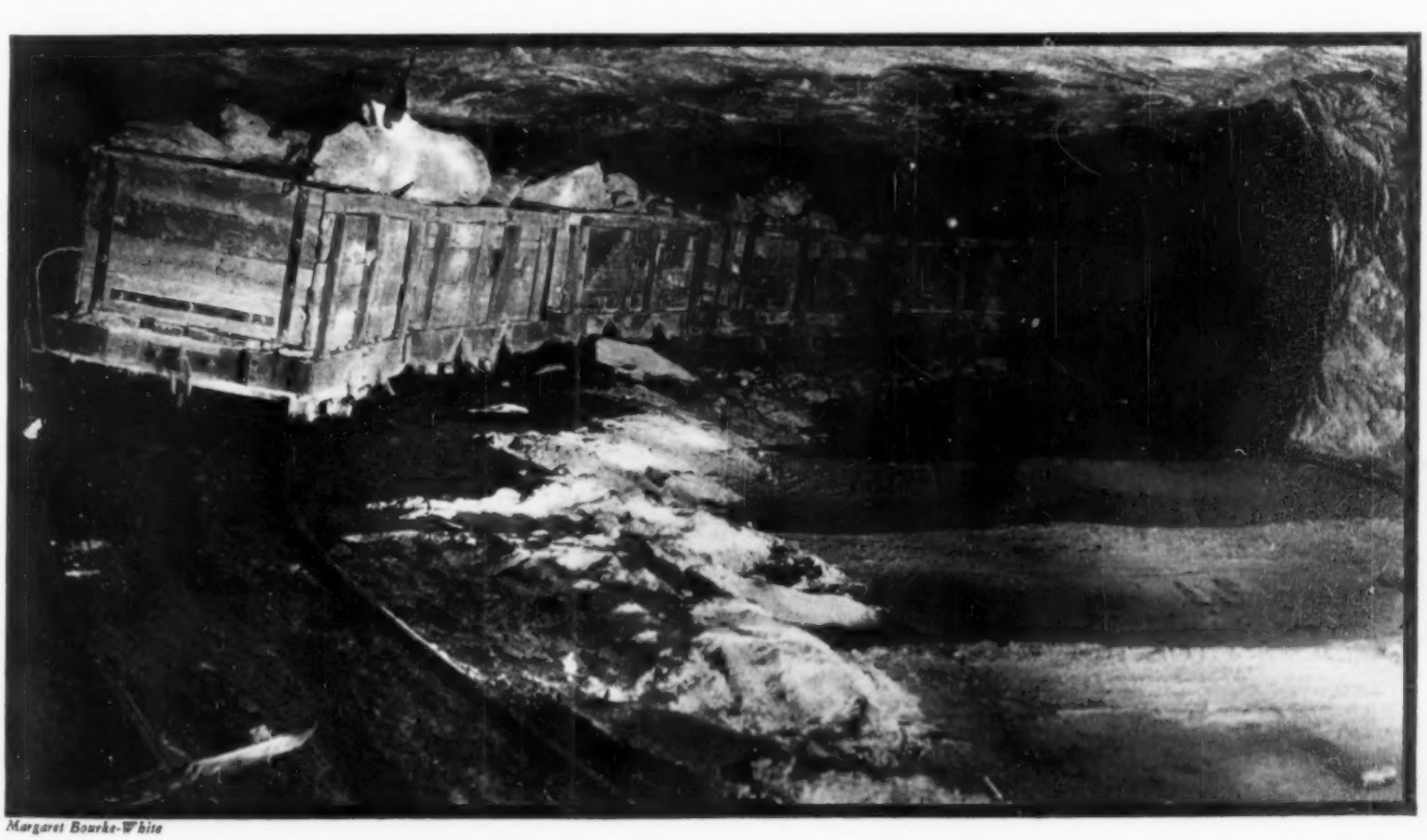
. . . By railroads to melt snow and ice off the tracks (over 50,000 tons a year) and to kill weeds (as, anciently, the Romans plowed over the site of conquered Carthage, sowed salt to render it eternally barren) . . .

. . . By farmers to liberate the potash in the soil

[*Continued on page 104*]

Margaret Bourke-White

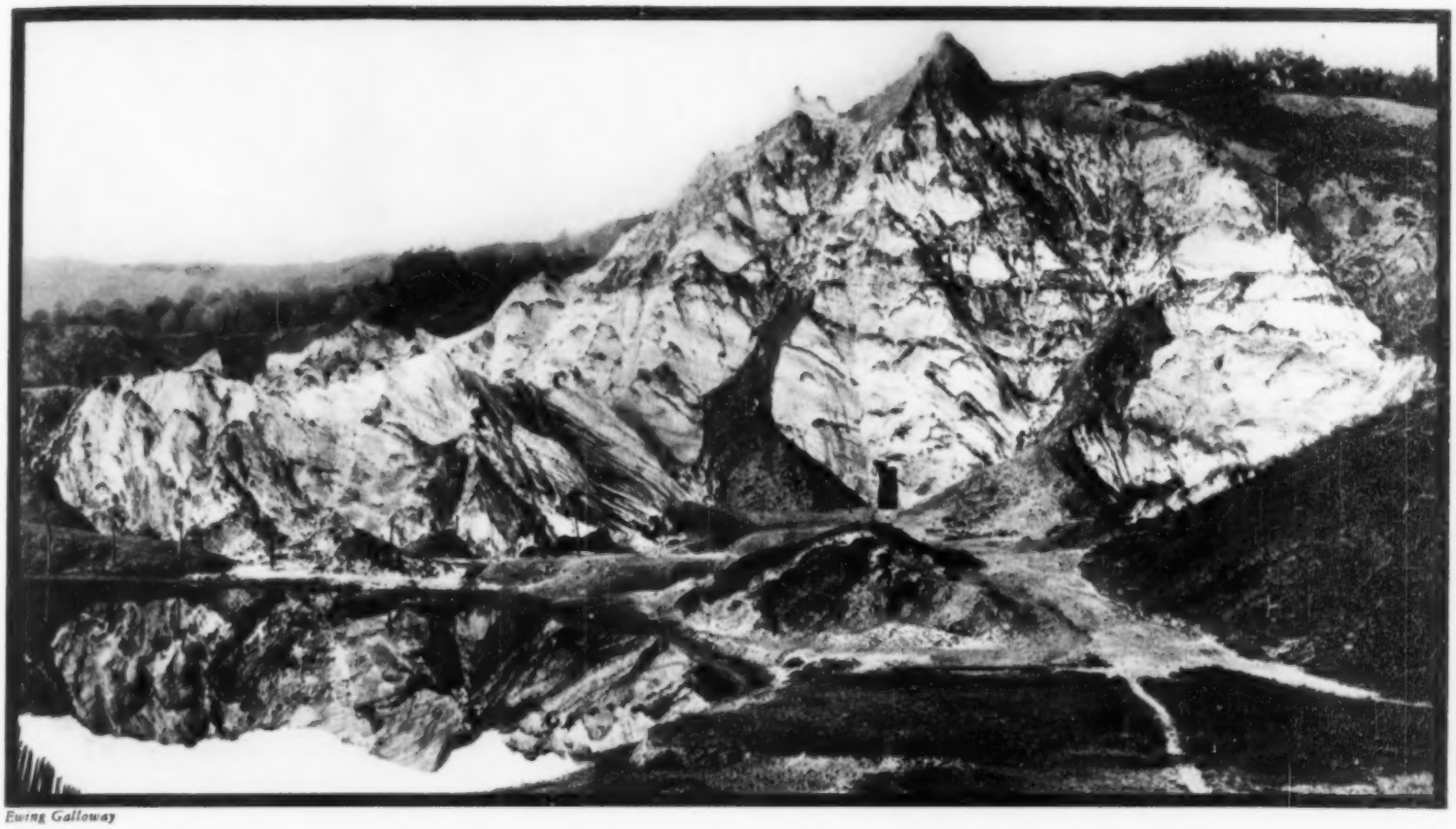
The International Salt Co.'s mine at Retsof, New York, is the largest to be developed in recent years. Like all salt mines, it is a miner's paradise: no gas (hence no explosions) and no water. Above are miners working away with electric drills at a ten-foot vein of salt. Later they will use dynamite and power shovels. Below is a fast freight on the mine railway. These pictures are from the mole's-eye viewpoint of the miner. For a more general idea of salt and its source, turn the page . . .



Margaret Bourke-White

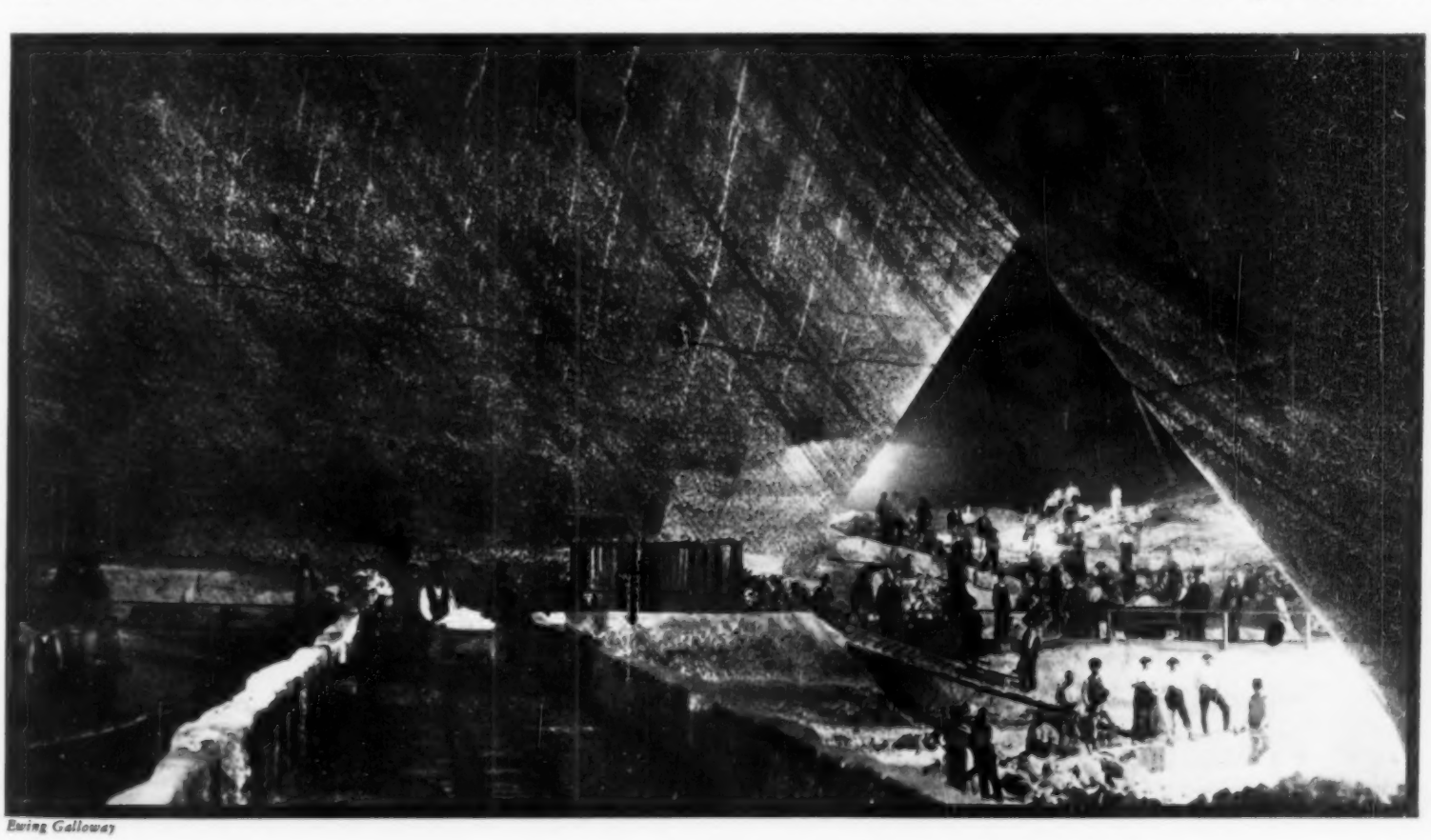
Publishers Photo Service ©

This is a pile of salt. It might be almost anywhere as salt exists almost anywhere. It happens to be in Spain. Its sparkling whiteness shows it to be evaporated from brine: half the U. S. tonnage is thus produced, the other half being mined. Below is the impressive interior of the country's oldest salt mine, on Avery Island, Louisiana. This mine is worked on the "room-and-pillar" method, which leaves great pillars of salt to support the roof. At Retsof, with the same method, 37 per cent of the salt is left in the mine as pillars . . .

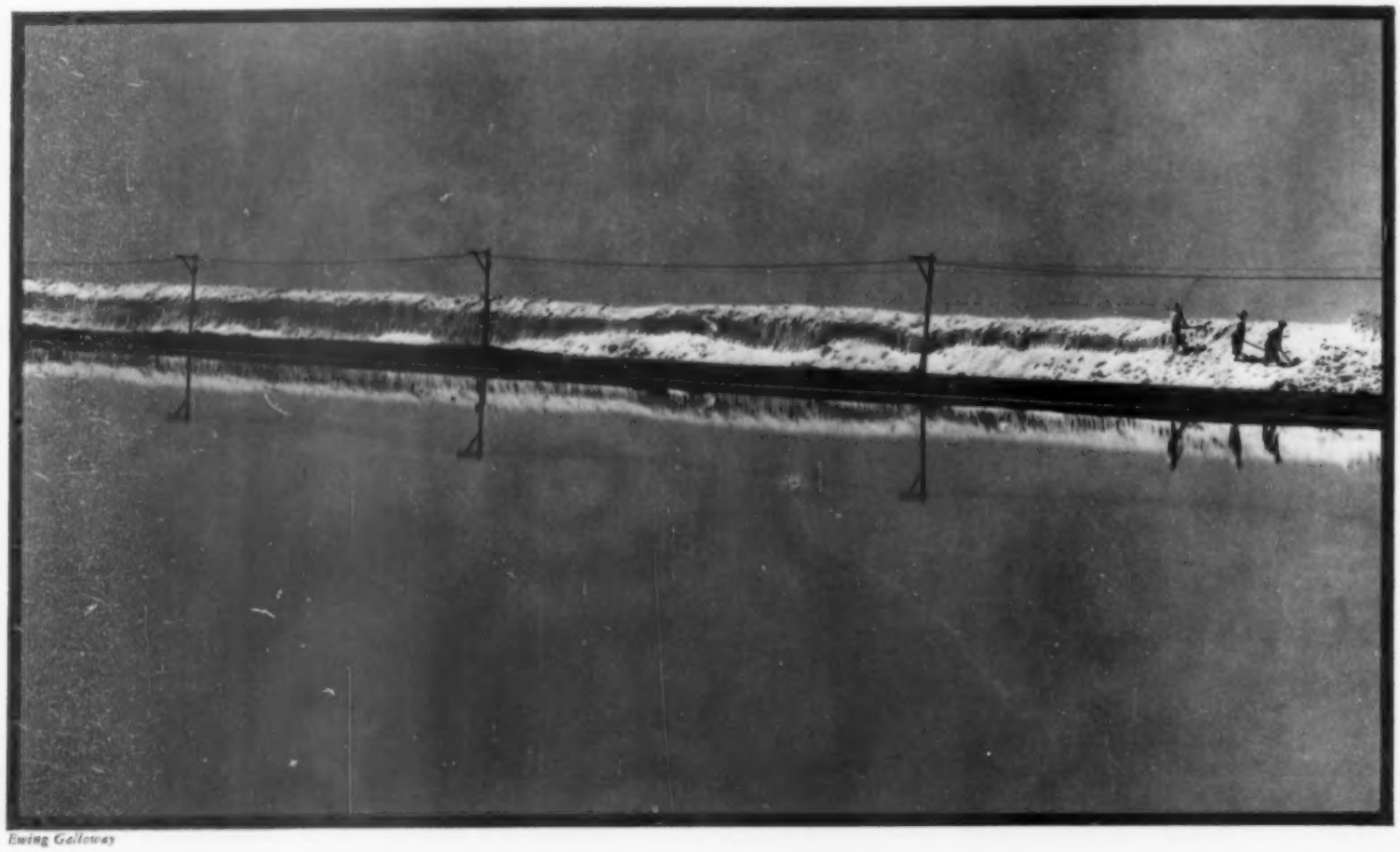


Ewing Galloway

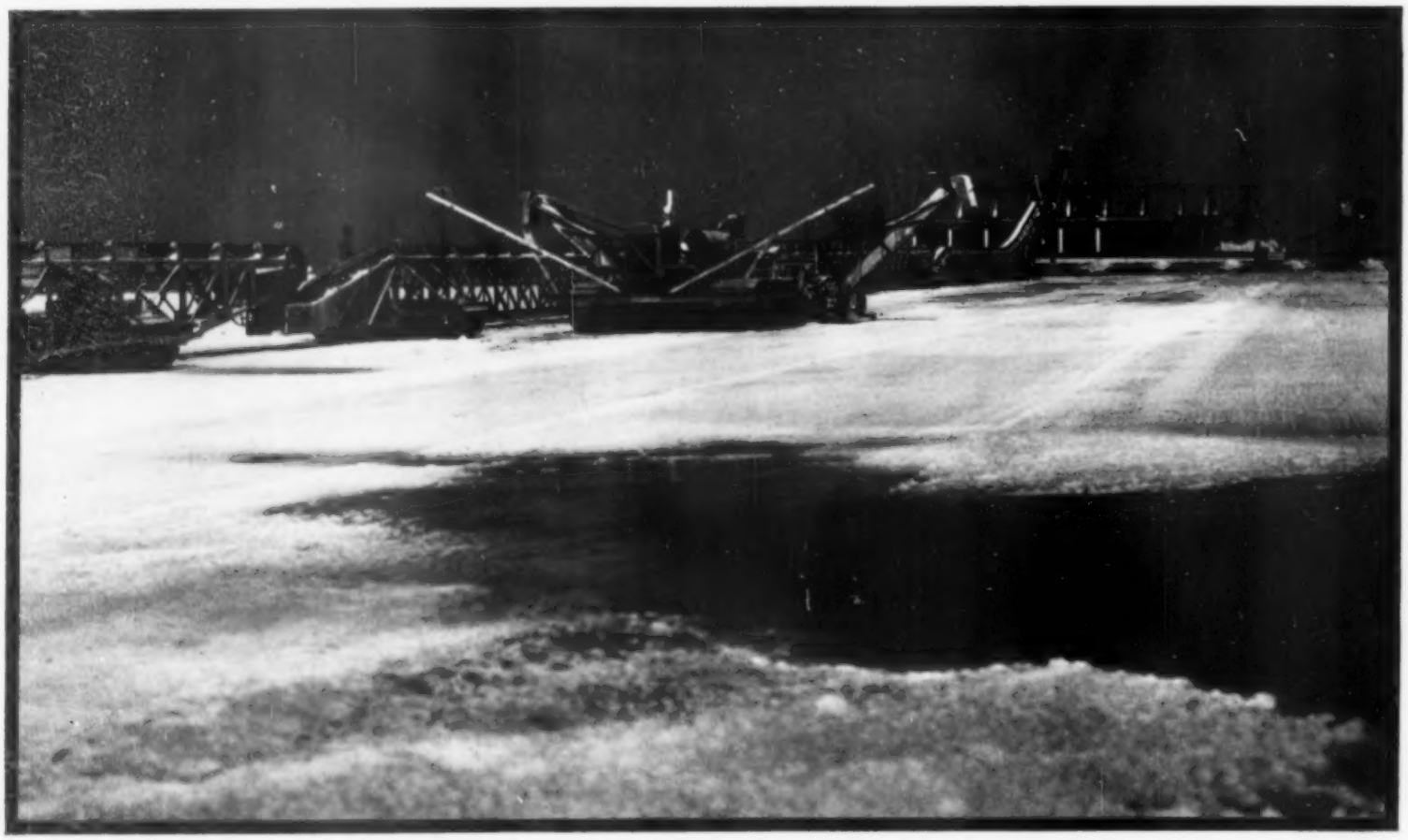
At Slanic, near Bucharest, Rumania, stands this strangely contorted mountain. If an inquisitive traveler should follow the line of electric light poles, he would be led, like the children of Hamelin, into the very bowels of the mountain. There he would come upon the futuristic setting shown below, which is nothing more or less than a salt mine. The walls are cut slopingly in order to hold up the roof, a variation of the "room-and-pillar" method. With which, let us turn from rock salt to its more primitive brother, evaporated salt . . .

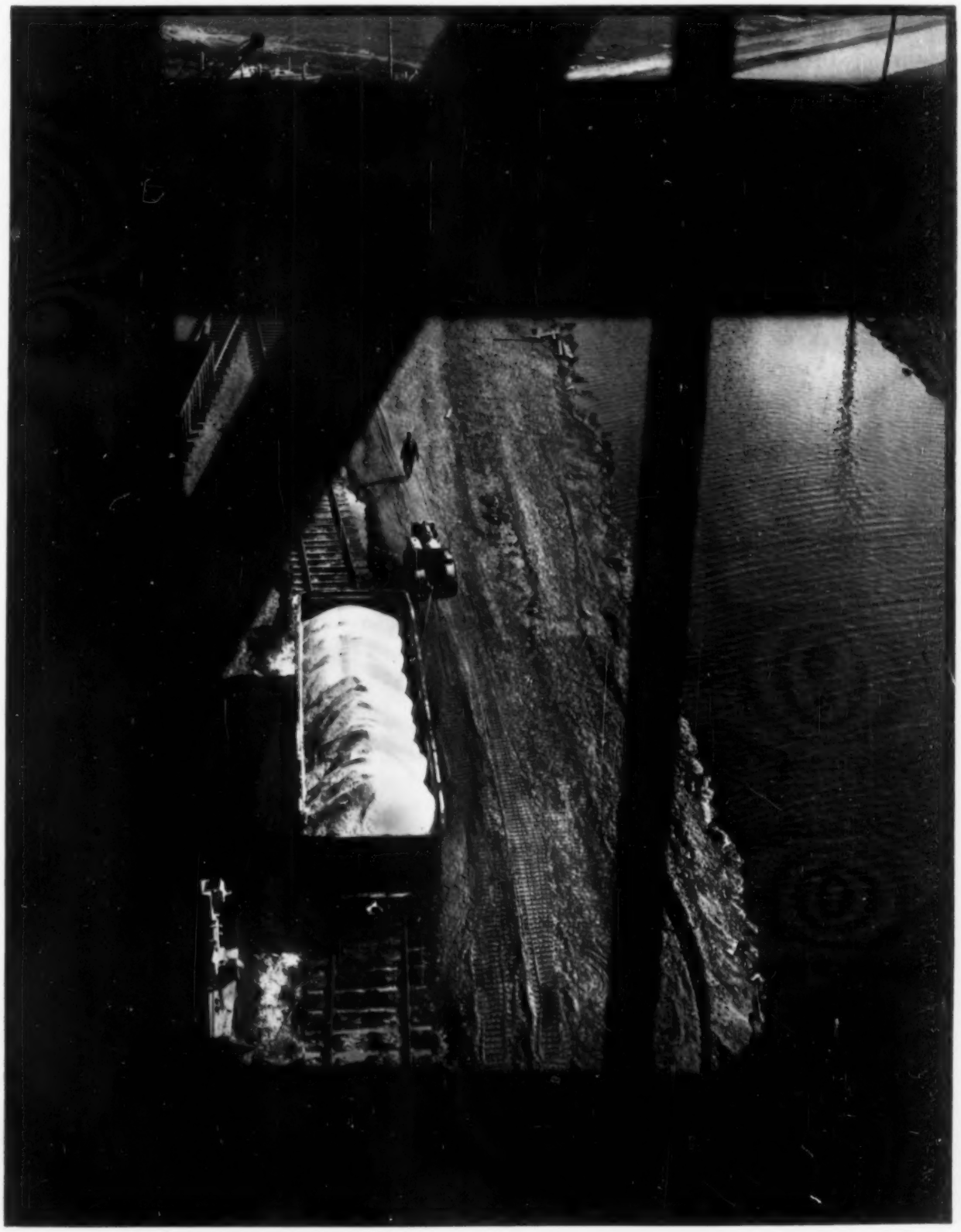


Ewing Galloway



Ewing Galloway





The most ancient (and obvious) source of salt is the sea. And the most ancient salt miner is the sun. On the Pacific Coast, notably in San Francisco Bay, sea water is let into wide ponds (opposite, above). After seven months of solar evaporation, the crop is harvested by tractors (opposite, below). Immediately above is a carload of freshly washed solar salt.

Economics Scarcely Exist

In India. But by inciting a national consciousness Gandhi may also quicken the "economic motive."

THERE are approximately 340,000,000 people in India, and the number remains more or less constant though tens of millions may die when the monsoon rains fail or the plague kills. Of the 340,000,000 not many more than 3,000,000 labor in India's principal industries. The fact, not surprising but important, is that the Indian does not want to work. Mr. Gandhi may perceive an economic and moral injustice in the Salt Tax (and Ramsay MacDonald, incidentally, has agreed with him), but the real point is not that the native does not want to pay a tax, but that he does not even want to earn.

India is sure of her culture, sure of her religion, sure of her soul. Beyond these certainties, she asks, why should she strive? The native feels no incentive from within, no zeal to "seize" an opportunity to double his toil in order to quadruple his goods. For has he not already enough, a hut, a loin cloth, and some dung to burn? In examining the industrial structure of India we are looking over an imported Western machine which is obliged to operate in at least a partial vacuum or absence of the Western "economic urge." The Indian would rather behold the jewel in the lotus than have *two* loin cloths or a hut through which the wind does not blow. Thus India, a land of no economic motive, and to speak of it economically is to speak chords to a flute. Whatever the implications, therefore, of Gandhi's boycotts and his march to the sea, to the majority of his compatriots they have no economic value. Economics does not interest them. They are not moved by the economic motive.

This holds for most of the 340,000,000. But although India's merchant princes have disappeared with the days when India exported the finest muslins and embroideries in the world, there are still the sons of Jamshetji Tata, there are still Parsees and mill owners, there are still the 3,000,000—and these feel the economics of Gandhi, who is a little of everything, but least of all an economist.

For India in the first place is a land of rich resources. There is petroleum to the east in Burma and iron in Jamshedpur; there is coal in Bengal and Bihar and Orissa, and gold in Anantapur and Kolar. There is salt in the Punjab and Rajputana, and sea salt factories in Bombay and Madras. And manganese. And mica. And lead and silver and copper and zinc. And wolfram and rubies. And 78,000,000 acres of rice, and wheat, and more cotton than any place in the world except the United States. And jute.

And in India most of the capital is foreign capital, for it is foreign capital that has mostly industrialized whatever is industrial in India. Two of the largest jute mills are Morgan-owned and American; the cotton export trade is largely handled by a Swiss firm and a Greek. The limousines that you see in the streets are Italian or British. The trucks are American. The finance and industry, export and import of the West are superimposed (perhaps artificially) on the placid indifference of India itself. The structure sometimes seems ridiculous and unbalanced, like a plate on top instead of under a glass of iced tea. India has produced only one great industrialist, Tata of iron and hydroelectricity, and he is dead. But his sons live on.

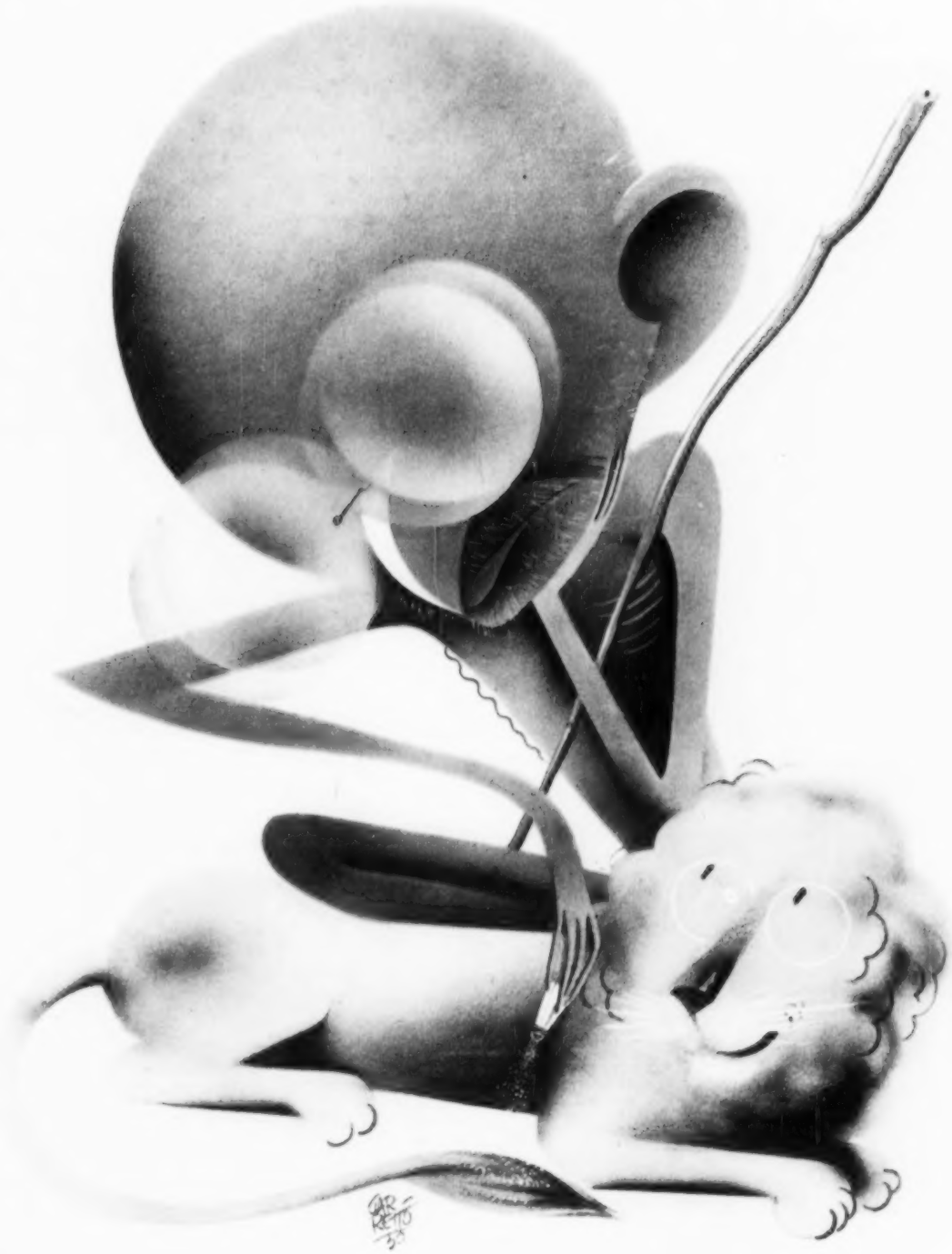
One must mention the Tata Iron and Steel Company, Ltd. Overcapitalized and often getting only half-hearted support from its directors and stockholders, it is nevertheless India's greatest private industry and is virtually the country's only steel mill. Sometimes it has had government support; sometimes it has not. But it can produce the world's cheapest pig iron. Although its steel is much more expensive than American, its failure in India would mean that decent wages and labor conditions were absolutely of no avail, that no matter what India's resources might be, the temperament of the native is such that no industrial India will ever be possible.

This, be it said, has not yet been proven. India bitterly lacks technicians and trained managers, and the educated class of India persists in refusing to study for such careers. Meanwhile thousands of "lawyers," speaking broken English, barely subsist. Of 175 directors of Bombay cotton mills, only eleven have had practical training (and four of these are directors of the same mill which, needless to add, is among the most successful). The case is further pointed by India's chemical industries. In raw products India again is well supplied. Yet it produces few important chemicals and these not in large quantities. Its cottonseed oil (India could produce 200,000 tons annually) is largely wasted. Its soap industry, probably by-product of a cottonseed oil industry, has never advanced because India lacks the necessary chemists and instructed soap-makers. Corollary industries like manufactures of barrels or boxes are nonexistent.

Perhaps the soundest industry in India is jute, which is virtually India's monopoly. A steady flow of jute has been exported from India since the beginning of the century. France and Germany take most of the raw jute; jute bags go first to Australia for their wheat, then to Java for the sugar, then to China. The United States takes most of the gunny cloth. More than 50 per cent of the stock is held by native Indians, but the industry is dominated by Scots (Dundee used to be India's great jute rival). At one time virtually the entire industry was in the control of the late Sir David Yule, who left a fortune estimated at $100,000,000 to his daughter, Gladys. A few years ago, however, his interests were bought out by J. P. Morgan & Co., who with Ralli Bros. now practically control the entire industry.

But Gandhi cares not for this industrial facet of India. When he makes his speeches, spinning the while on his little hand loom, he preaches an independent self-supporting India, and he would be the first to admit that this is tantamount to a return to the primitive. "Boycott all English goods," says Gandhi (and incidentally it was a Western knife in a British hospital that operated on him for appendicitis). Economically this might mean that countries other than England would profit at England's expense. Actually countries other than England will probably boycott India. Not out of sympathy for England, but because they are forced to doubt India's ability to pay. But Gandhi is not deterred by this consideration. "Boycott all English goods," he repeats and increasing numbers of natives agree with him.

And, oddly, in this increasing agreement with Gandhi and this increasing consciousness of Gandhi lie the very factors that may defeat his schemes for a return to a quasi-primitive self-sufficient India. For it is a fact that in most of the Indian dialects (and there are upwards of 300), there is no word for India. It is a fact that the greatest part of India is totally without national consciousness. And it is a further and a most important fact that in Gandhi is crystallized and dramatized whatever desire for nationalization exists in India. Whether he wills it or no, Gandhi is creating national consciousness (as there is in Canada, as there is in Australia). He is beginning to make India's 340,000,000 realize that not only do they belong to their local tribes, but that they also form part of an integral country called India. It would be almost impossible for such a national consciousness not to express itself in economic betterment. An ironic conclusion is therefore possible, namely, that a movement designed to remove the West from India may result in a far more rapid Westernization of India than has ever before occurred.



London Graphic

"GANDHI, THE TAIL-SALTER"
BY GARRETTO

Skyscrapers: Pyramids in Steel & Stock

FORTUNE pursues its examination of the building of a skyscraper: How are these towers financed: What earnings are there and against what costs: Who pays: Who profits: Who loans to whom, on what security, to what extent, and when: Together with a gallery of brokers, bankers, bond house men, and building financiers.

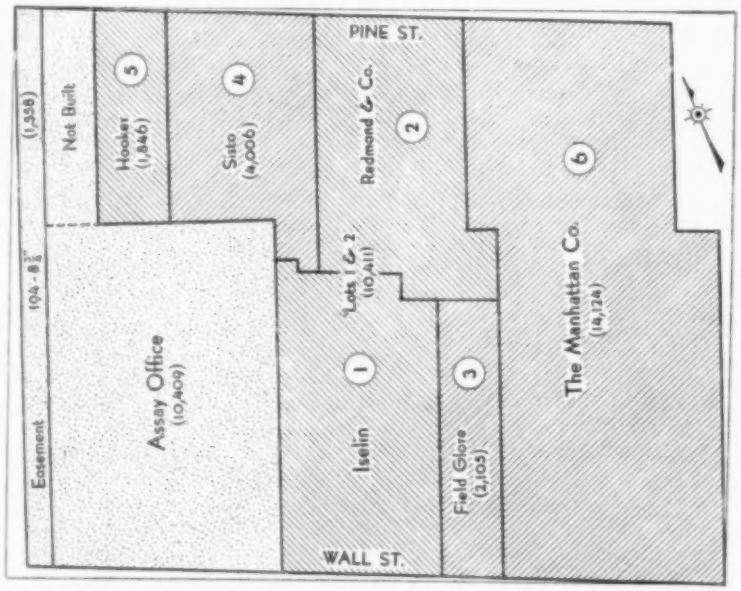
ALL a man needs, to own a skyscraper, is the money and the land. And he may be able to get along without the money.

But since there is no known substitute for land and no satisfactory legal device by which the investing public can be induced to bring its own, the promoter must secure the land. And its acquisition is not easy. Land capable of producing skyscrapers and keeping them green is as limited in quantity as it is unlimited in price. And it practically never exists ready-made in blocks of sufficient size for the requirements of modern building.

Consequently the first concern of the promoter of a great building is the assembling of his plot. The transaction may proceed in any one of a number of different ways, and it may even occur that the land seeks out the promoter, as when a real estate man with no personal intention of building offers a group of lots already assembled. Also the promoter may be any one of a number of different persons. He may be a builder or a speculator or some such conglomerate of corporations as the French companies or a mere member of the great American public with a hankering for real estate. If he is a builder, he will probably devote his energies to assembling not only plots but plot owners and future tenants as well, so that his activities will finally resolve themselves into the construction of a definite building for a definite tenant to be turned over to definite owners. But even a builder may be, and frequently is, organized for so many other functions besides that of building that he may himself carry the whole project.

In the simplest case a gentleman with a building in mind, a location in view, and a certain amount of cash, which may or may not be borrowed, in his pocket, undertakes the promotion. His first step is to consult with the real estate brokers. If he has complete confidence in some one office he may confide his plan to that office; otherwise he will apply to several brokers, commissioning each of them independently to buy some one of the several plots he will require. The land for 40 Wall Street was assembled by Brown, Wheelock: Harris, Vought & Co., Inc. in conjunction with Charles F. Noyes & Co., Inc. The Adler property at 80 Wall Street was assembled by Charles F. Noyes alone. In either type of case the probability is that the actual negotiations for each plot will be apparently conducted by unrelated brokers and for separate purchasers. Title to one lot may be taken by the real estate house which, in turn, writes a letter to the promoter stating that it holds the land for him—in effect, a declaration of trust. Title to another will go to a corporation organized by the promoter's attorneys for the purpose and bearing the street number as a title, or, where the street numbers have been exhausted as in downtown New York, whatever title the ingenuity of the attorney can devise, from an initial to the name of a Persian town.

The maneuvers of experienced real estate brokers in these matters are the reverse of those of Foch on the Marne. The property is attacked from the principal front, and the lots facing on that street—say Wall Street—are first secured. Then the secondary lots are taken. And by the time the gentlemen in possession of the rear lots have begun to suspect that their properties have key value to a great scheme, they find themselves cut off from the sun and with only one possible profitable movement—backwards and out. In the case of the 40 Wall Street assemblage the lots involved were situated roughly:



Lot 1 belonged to the Iselin estate and had been leased for ninety-three years by G. L. Ohrstrom & Co., the originators of the scheme. The leasehold of lot 2 had previously been secured and without difficulty because it was only of great value as an adjunct to lot 1. Lot 3 belonged to Marshall Field of Field, Glore. Mr. Field was approached and was found to be amenable but preferred sale to lease, and the promoters were eventually obliged to buy his land. Next in order the fee of lot 4 was secured, since lot 5 was without real value except to the owners of 2 and 4. And lot 5 followed. At this point it was the intention of the promoters to build on these five lots, depending on the low building of the Assay Office for light. But it later became known that the Assay Office building was for sale, and since its purchase by anyone else would jeopardize the entire scheme the promoters were forced to buy it. Before this lot was added, The Manhattan Company, owners of 6, elected to join the promoters, and their land was added under leasehold, making the final building plot considerably larger, and certainly different in shape from the plot originally intended.

There are, of course, recalcitrant owners. One man in New York, recently dead, made a practice of holding-out and was enabled to leave over $1,000,000 worth of sterile property in various parts of the city. And there is the famous corner of the Macy lot which no Straus, so tradition has it, will ever again attempt to buy or lease. But hold-outs are not in general so spectacular as might be supposed, partly because real estate men are skillful, partly because plot owners can read the writing when it is large enough upon the wall, and partly because the increase of value in various plots brought about by their aggregation into one is so great that purchasers can afford to pay for the last piece. The usual estimate is that one lot is worth 10 per cent more than its three or four parts. Extremely optimistic realtors put the increase at 50 per cent on the basis of the enormous potential increase in the population of the area.

For his activities in behalf of the promoter, the real estate agent

is paid a commission based upon the standard rates accepted by the Real Estate Board. These amount to 2.5 per cent on sales up to $100,000, 1.5 per cent from $100,000 to $1,000,000, 1.25 per cent to $2,000,000, and 1 per cent thereafter. The income of the great offices is not, however, limited to such commissions. Brown, Wheelock: Harris, Vought & Co., Inc., for example, divide their organization into a brokerage department and a management department, with appraising, coöperative sales, insurance, and other incidental departments added. Fifty per cent of their total business is in management—i.e., operation, renting, accounting, purchasing, etc. In this work their commissions are fixed by special agreement with the owner. Real estate transactions very quickly run into huge sums. The Noyes offices handle a yearly volume of rents, plots, and management of $400,000,000.

The sums involved in the purchase of lots suitable for the construction of great buildings are, of course, enormous. The Empire State Building site is said to have cost $16,000,000 or more than $8,000,000 an acre. The lot at the corner of Fifth Avenue and Forty-third Street sold a few years ago at $340 a square foot. The U. S. Assay Office site, purchased for the Forty Wall Street Corp., averaged $624 a square foot, and land at No. 1 Wall Street is reported to have cost $700 to $800 a square foot.

What the promoter buys in assembling his plots is practically no more than an option, though its legal incidents differ. Assuming four plots worth $500,000 each to the purchaser and assuming a purchase of the fee instead of the leasehold, the purchaser (or his dummy corporations or his real estate agents) will in each case buy the property upon a contract to take title in, say, sixty to ninety days, giving an opportunity for a title guaranty house to examine title, prove contiguity, and insure title. Two hundred thousand dollars will be paid in cash at time of signing the contract of sale, and a further cash sum on taking title. The balance will be covered by mortgages running for, perhaps, six months. If, during that period, the plots have not been assembled, the more advantageous course for the promoter to follow may perhaps be to forfeit his $200,000, and thereby the individual plots revert to their previous owners, but such a course is rare where the down payments are considerable. The dummy corporations are without funds, but the land remains as security.

Having assembled his land, the promoter has two alternatives. He can let it be known that he has secured the property (an impressionistic drawing in the press showing the ninety-eight story building he does not intend to erect will help) and see what luck he will have in a quick turnover, or he can organize for building. Most of the killings in skyscraper construction are made in the first way by men who don't build skyscrapers. Profits of $1,000,000 or $2,000,000 on a $500,000 cash investment or no investment at all are quite possible and so common that Colonel Starrett is led to remark that no one engaged in building "makes much more than a living except indirectly." But it does not necessarily follow, as it seems to follow in Colonel Starrett's mind, that the industry is peculiar. From the writing of books and the painting of pictures to the building of cities, in all the creative and constructive arts, it is true that the profits are made by persons who, themselves incapable of creating anything, are nevertheless smart enough to trade upon the labor or the potential labor of others. The fact that such persons exist is no more proof of the rottenness of the building industry than the presence of flies in a kitchen proves that the cooking is bad. On the contrary.

Nevertheless the comparatively small profit of actual building, as well as the large sums required, has had the effect of forcing most of the building companies into more or less close association with promoting and financing companies. Starrett Bros. & Eken, Inc. is a wholly owned subsidiary of The Starrett Corp., which also owns Starrett Investing Corp. George A. Fuller Company is owned by the United States Realty and Improvement Company, and Thompson-Starrett is closely associated with the General Realty & Utilities Corporation. Marc Eidlitz & Son, Inc. is said to be the one important building company which has limited itself to building for others.

If the promoter seriously intends to construct his building, his first step will probably be to organize a new corporation for that purpose, to which the titles of the various plots, subject to the mortgages, will be conveyed. This corporation in the simplest case may be formed by the promoter alone, and a builder employed by the corporation. Or, and preferably to the promoter, it may be formed by the promoter and the builder together and the common stock, or so much of the common stock as the exigencies of financing leave them, divided between the two.

Having come so far, the promoter and his brand new corporation are face to face with the ancient human need. How shall they get the money? Fortunately money is not so hard to get for those who want to turn it into something else as for those who merely want it. And if a man, or a corporation, has a plot of land with which to back up his intentions almost anything is possible. There are savings banks which will accept the mortgage title to the plot and loan its owner as much as 60 per cent of its appraised value, provided they do not thereby commit more than, say, 70 per cent of their portfolios to such loans. There are trust companies which will loan to 66 per cent of the valuation at 5 per cent, and insurance companies which will do the same thing at slightly higher rates—5.5 per cent instead of 5. But none of these lenders are altogether satisfactory to the promoter's purpose. For one thing they, and their ancestors before them, are accustomed to treat a loan as an accommodation by the lender, and they rarely display any great anxiety to do business. For another their appraisals are so conservative as materially to decrease their loans. Again their loans are usually not available until the building is completed—and what the promoter and his corporation want is the money with which to build it. There are, it is true, plenty of insurance companies which are equipped to make construction loans payable from time to time as the work progresses. And savings banks are still used. Of the estimated $20,000,000,000 of mortgages upon real estate now outstanding, about $4,000,000,000 are in banks reporting to the Comptroller of the Currency, and 31 per cent of these $4,000,000,000 are held by savings banks.

Nevertheless, it is not to the banks or the insurance people that our promoter is apt to go, but to one of the mortgage companies. The fundamental difference between the two types of lenders is that the mortgage companies arrange, at a charge for their services, for the investment of the public's funds in the enterprise, whereas the banks and insurance companies invest their own funds, or funds of which they are in effect trustees, and find their profit in the returns from the investment. Consequently the banks and insurance companies look upon a request for a loan as a request for a loan whereas the mortgage companies look upon it as an opportunity to do business.

This difference in attitude is reflected both in the cordiality of the mortgage houses toward promoters and builders and in the incidents of the first mortgage bonds issued for construction and building loans by such houses. The old traditional mortgage was a device for security and nothing more. The real estate mortgaged was usually worth twice the amount of the loan. Its value was independent of the mortgagor and his possible default. And it was appraised with an eye to the amount it would bring on foreclosure. In other words the mortgagee had no interest in the property covered by his mortgage except in so far as it served as a pledge. In the modern mortgage bond secured by a great metropolitan building the situation is very different. The mortgagor, and obligor on the bonds, is usually the very corporation expressly organized to own this particular building. Therefore the value of the mortgaged property is closely linked up with the financial health of the mortgagor, for the mortgagor will only default if the building, as a going concern, is a failure, and the value of the building as security for the loan is, conversely, not independent of the solvency of the mortgagor. Consequently, to the extent that the security for his investment and the interest on his investment are dependent on his debtor's business success, the bondholder is a participant in that business and that success as the old-fashioned mortgagee never was. In other words, mortgage bonds of this type have moved away from the old mortgage conception and toward the category of preferred stock.

The change in point of view appears in the practice of the bond houses. It is generally agreed to be good accounting practice to include in the value of the building for purposes of loan such items as the promoter's loss of interest on the land during the whole period

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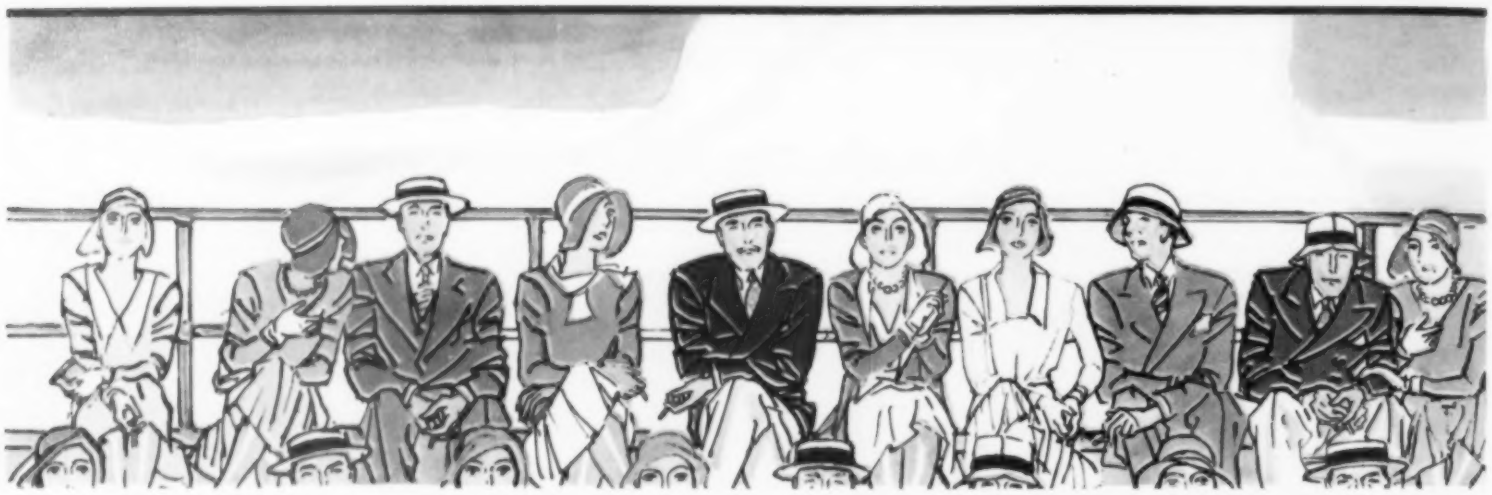
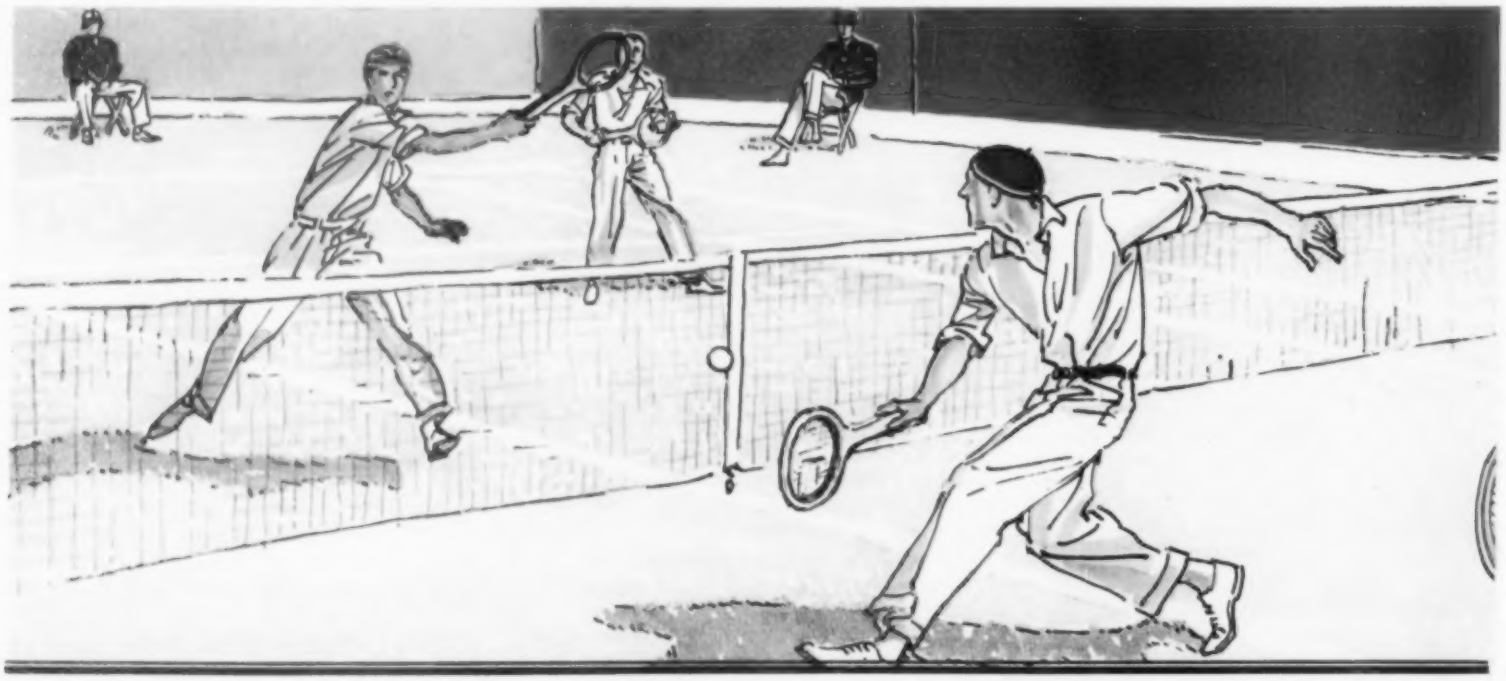


General Motors of Games: Spalding

But with less than 1 per cent of General Motors profits . . . A half century of unquestioned leadership, but the second million in profit coming hard.

MR. JULIAN W. CURTISS, who is president of A. G. Spalding & Bros., athletic outfitters, sat in his office at 105 Nassau Street, Manhattan, and discussed the lively ball. Mr. Curtiss is an erect, extremely square-shouldered gentleman who rowed on his varsity eight at Yale and has been in the sporting goods business for more than forty years. He has a rather florid complexion, piercing eyes beneath heavy eyebrows, and a trim military mustache.

On the topic of the lively ball, Mr. Curtiss is distinctly emphatic. A great many followers of baseball believe that the ball now in use is abnormally active and travels much more rapidly and to much more distant points than went its predecessors of a few years back. It is certainly true that there is now a great deal more hitting than there was ten or fifteen years ago. Pitcher Burleigh Grimes, for instance, who has been around for a long time, says that he used to figure on allowing two runs a game and winning and now figures on winning by allowing four runs. During the present season, Mr. Grimes has shown a regrettable tendency to allow four runs in an inning and not to win any games, but that is probably not because the ball is more lively but because Mr. Grimes is less. At any rate, the batters are hitting more home runs in a week than they used to hit in months—the Athletics and the Yankees made ten in one game this spring—and the ball used now is



popularly known as the "rabbit" ball, the reference being of course to bunny's capacity for rapid and sustained movement.

With the statement that hitting has increased, Mr. Curtiss has no quarrel. But with the argument that the owners of the major league clubs (one such owner, Mr. Thomas S. Shibe, of the Philadelphia Americans, present world's champions, being also a Spalding director and head of the Spalding baseball plant) have altered the ball in order to promote free-hitting games, Mr. Curtiss has a very definite quarrel indeed. For Spalding makes the baseballs used in both leagues and has made them since the leagues came into existence, so that Mr. Curtiss eminently qualifies as an expert on baseballs past and baseballs present. And Mr. Curtiss says, flatly, unequivocally, that the ball now used is the same as the ball used last year and the balls used for many years back.

"This lively ball talk is nonsense," says Mr. Curtiss. "The ball is exactly the same as it was and don't let anybody tell you differently. There are more home runs because there are too many stands built in the outfields and because the hitters are all trying to put the ball out of the park. Also the spitball and other trick deliveries have been prohibited, and the umpires have been instructed to keep new balls always in play. It's the pitching that's most different. I could go in there myself and hit some of those pitchers they have today." And Mr. Curtiss shakes his head in sorrow at the thought of the unskillful moundsmen who get behind the batter and put a fast one down the groove and blame Spalding when someone golfs it out of the field.

To the relatively disinterested observer who neither hits nor pitches, the warmth of Mr. Curtiss' feeling concerning the lively ball illusion is rather more interesting than the ball itself. There is no doubt but that the general public likes hitting and lots of it, prefers baseball scores of 8-6 to scores of 1-0. Mr. George Herman (Babe) Ruth earns $80,000 a year almost entirely because people will pay that sum and more for the privilege of watching him hit home runs. It would seem, therefore, that the club owners and Mr. Curtiss would have been well within their rights had they indeed altered the ball to multiply the homers. Remembering, however, Mr. Curtiss' flat denial of any such alteration and appreciating his extraordinarily intimate association with baseball, it is not difficult to see why he is irritated by continued references to the "rabbit" ball. For Mr. Curtiss and Spalding are accustomed to having what they say accepted. For more than fifty years the Spalding company has been an outstanding factor in the development of American sport. It has been the pioneer American company in the manufacture of nearly every implement with which games today are played. There is between Spalding and sport more than merely a merchandising relationship, a relationship which, if profitable to Spalding, has also been beneficial to sport. And from a standpoint so inevitably and so legitimately episcopal, irreverences may be readily detected and deplored.

Mr. Curtiss to England

It was back in 1885 that Mr. Curtiss first came (as a salesman) to the Spalding company. Formed on February 3, 1876 (just one day after the formation of the National League), Spalding had begun as a partnership between Albert G. Spalding, famous old-time pitcher with the Chicago Nationals, and J. Walter Spalding, his brother. Each brother put in $400 to make the company's $800 initial capitalization. It is difficult now to realize the small financial scale on which sports and the sporting business then operated. The entire season's pay roll of that Chicago National League club for which Mr. Spalding so successfully threw his own baseballs was less than $25,000, and the entire first year sales of Spalding were less than $12,000. In 1878, however, the young company received a large addition to its capital when William T. Brown, banker and Spalding brother-in-law, joined the firm. With 1885 came the acquisition of A. J. Reach Co. (founded by another famed old ball-player), and in 1892 was acquired Wright & Ditson. George Wright was still another baseball old-timer, had also been a noted cricketer. He and his sons, Beals and Irving, whom tennis followers of some twenty years back well remember, are still Spalding men. So by 1892 Spalding had absorbed two outstanding competitors. Its field, however, was very narrow. There was a skate subsidiary (Peck & Snyder) and later came the bicycle craze, but on the whole the company's production was not sufficiently diversified. It is likely, indeed, that the Reach and the Wright & Ditson mergers resulted from the sporting goods business' inability to support more than one thriving manufacturer.

In 1892, however, college-trained Mr. Curtiss, interested in intercollegiate football, traveled to England to watch the making of footballs, and from his trip resulted the beginning of Spalding's modern period. Mr. Curtiss did indeed observe footballs in the making, and to such good purpose that Spalding has now a tannery in Leeds where are made the covers used in the Spalding balls currently supplied for the U. S. football season. The most important moment in his journey, however, came when, in London, he noticed some gentlemen lugging with them an assortment of strange looking sticks. Upon asking what these implements might be, he was told that they were golf clubs, so, in a spirit of enterprise and chance-taking, he added to his baggage the sticks and balls of golf. When Mr. J. W. Spalding saw these odd objects in his shipping room, he decided that Mr. Curtiss had partaken too freely of British hospitality, but nevertheless Spalding was soon turning out the first made-in-America clubs and balls. Spalding also persuaded Harry Vardon, great English golfer, to tour the United States giving exhibitions of the new and extraordinary pastime. It should be noticed that Mr. Vardon played with a solid gutta-percha ball, heavy, stony, and with little loft or carry. The modern golf ball, with its center of tightly wound rubber thread, was developed

THE NEW GOLF BALL, STEEL CLUBS, WOOD RACKETS . . . OTHERWISE, STANDARDIZATION THE WORLD OVER

IN ADDITION to the lively ball controversy in baseball, golf players are agitated over a new ball, in this case undeniably and officially different from the old. The United States Golf Association has killed the golf ball now in use, is replacing it with a slightly larger ball which, while no doubt a somewhat better target, does not give the distance obtainable with the small sphere it replaces. The distance in the air is about the same on a quiet calm day, but the new ball has much less roll. All golf ball manufacturers have agreed to make only the new ball after January 1, 1931, and all official tournaments in this country will be played with it. The large size ball will cause trouble in international golf, since England and all countries other than the United States are continuing with the smaller ball.

This step away from international standardization is the more regrettable since England has recently accepted the steel-shaft golf club. Spalding believes that English legalization of the steel shaft will result in the general passing of the hickory shaft. The steel shaft in the past has had the disadvantage of transmitting too much impact vibration and thus tiring the user's wrists, hands, and fingers. Some golfers are so sensitive to vibration that they can tell, by the shock difference, whether a hard or soft steel has been used in the club-face. Recently, however, Spalding has perfected a steel-shaft club with a rubber shock absorber between shaft and head, thus considers eliminated the only drawback to the steel shaft.

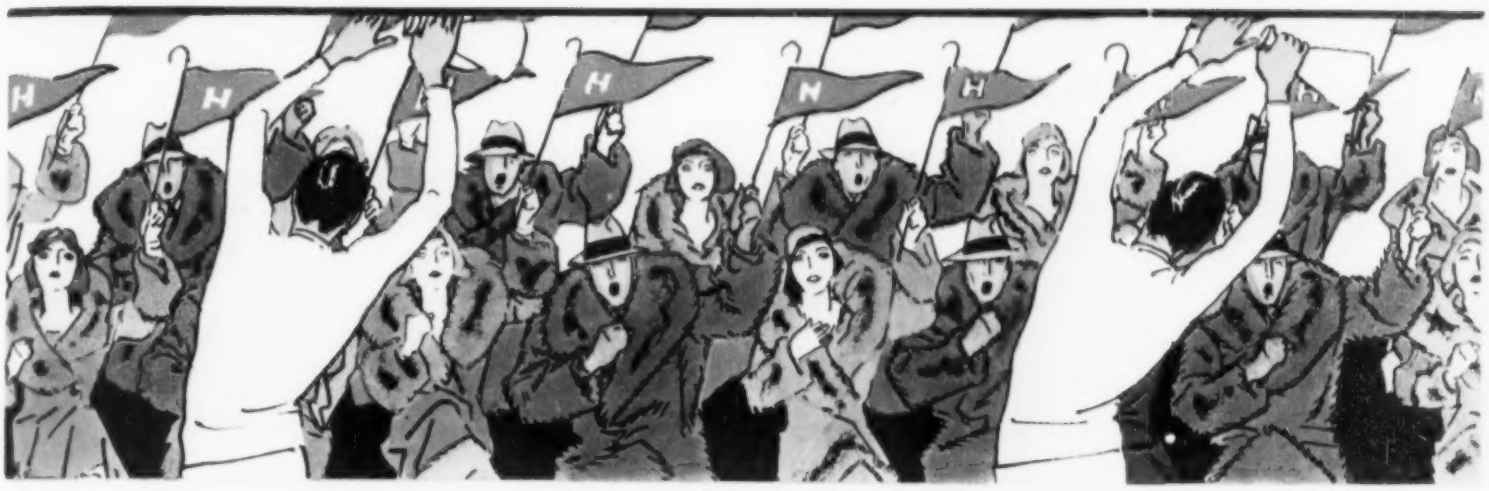
But though steel is gaining in golf, the steel tennis racket has not enjoyed the same popularity as ranking tennis players still prefer the ash frame strung with split lamb-gut. Incidentally, there is a European type tennis racket and an American type, just as there are the two types of tennis. The American wants the ultimate in speed, looks for a small-headed racket. The European, willing to sacrifice something in speed for greater accuracy, uses a racket with a larger head.

Except for the new golf ball, there have been no sweeping changes in either the rules or the implements of sport, a desirable international standardization having been generally attained. Tennis the world over, for example, is played with precisely the same ball. Nor have rules committees, during the past winter, done any vital tinkering with the laws of the games they supervise.

by Goodrich Rubber Co., but Spalding promptly bought the manufacturing rights and Spalding also introduced the "dimpled" surface on which today's ball so much depends for its distance. The game which Mr. Curtiss brought across the Atlantic was so radically bettered by Spalding innovations in balls and clubs that Spalding improvements, recrossing the ocean, greatly increased golf's popularity in even its British home.

Any attempt at tracing the development of American sport during the last forty years would be obviously impossible in the scope of less than a volume. Perhaps the simplest measure of its progress is found in the extent to which the heroes of sport have become also the heroes of the nation. The public of the old-time athlete was enthusiastic, but limited. The Coys and the Hinkeys, the Larneds and the Sears, the Vardons and the Rays, the Keelers and the Kellys were as excellent examples of athletic prowess as their descendants of the present, but for one member of the general public who followed their fortune there are a hundred worshipers of the idol of today. There were names in the old days; there are pet names today. With the exception of professional boxing, which has suffered a rush of money to the head and become thoroughly a "racket," there is not now a major sport which has not produced one or more exponents not only as well known as a President but perhaps considerably closer to the hearts of their fellow-men.

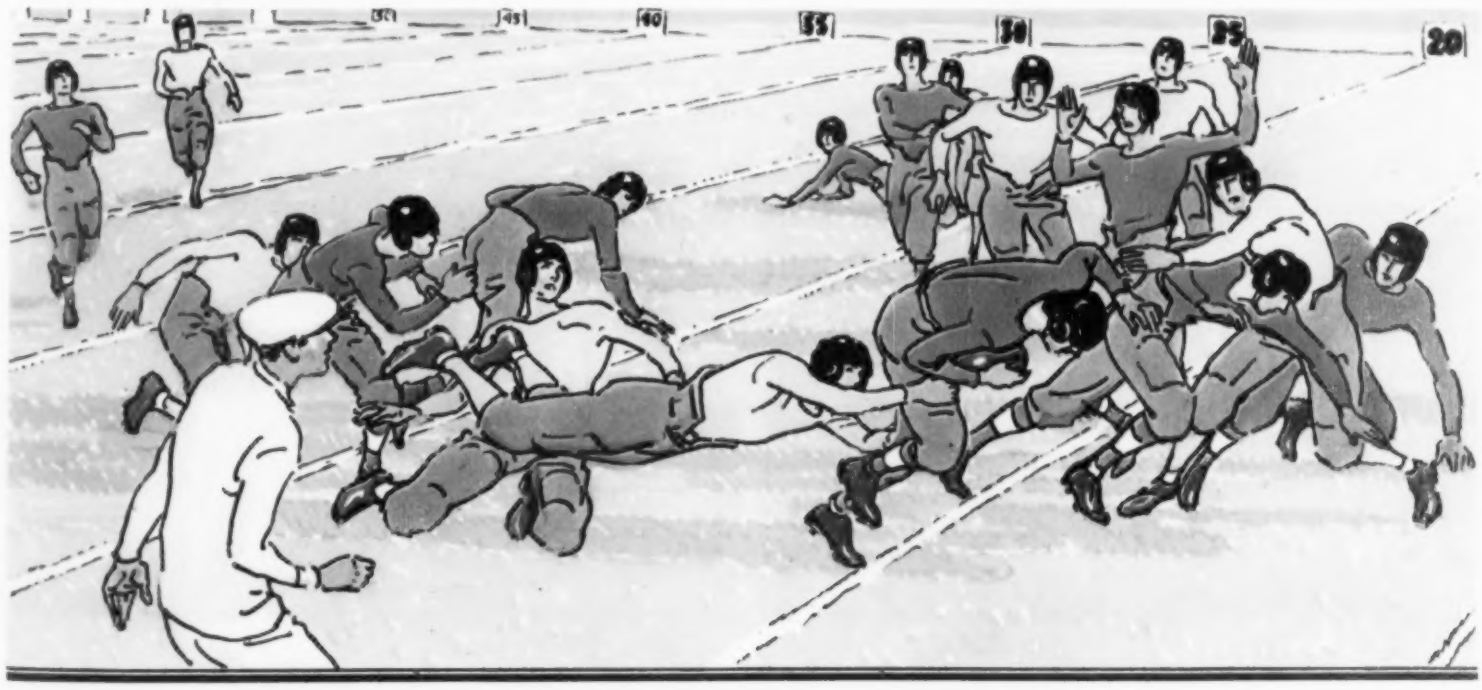
Tennis has the histrionic Tilden, probably greatest player of all time, scolding galleries and linesmen and tennis associations, equally spectacular in victory or defeat. In women's tennis it is "our Helen," "little poker face," with a side line of caricatures and a game which, with the passing of Suzanne Lenglen, is nearly without competition among her sex. Golf has Bobby Jones, attorney and part owner of the Atlanta baseball club, whose favorite club (Putter Calamity Jane) has joined him as a national figure. And pro-golf has Walter Hagen, who has made upwards of $50,000 a year, mostly in exhibitions, though he has also endorsed everything from underwear out, a great match player with a highly developed competitive instinct and a certain failing with regard to punctuality. In baseball it is, of course, Ruth the Bambino, home run hitter extraordinary, big of heart and waist and keen of eye. Once the Babe was very stubborn about the proper hour to go to bed, and once he is said to have driven an expensive motor car off a road and into a ditch, climbed out uninjured, said to the farmer who wished to tow him in, "Oh, keep the car," and walked off. But lately the Babe has become sober and serious, in his old athletic age of nearly forty, and knows that his legs cannot support his great body as they used to, so into the bank goes some portion of his large salary. Football has produced no one outstanding luminary since the passing of Harold (Red) Grange, who made ice famous by carrying it during the summer, then grieved many a football enthusiast by turning professional, although as a pro-player the Ghost has not been nearly so galloping or nearly as potent a box office



attraction. But football has never been more popular, and certainly there exists no marked indifference to such figures as Stanford's Warner or Notre Dame's Rockne or Yale's Booth. Given what must run into billions of dollars of free publicity, housed in bowls and stadiums to which one must revert to the Coliseum for comparison, never more universally followed, more substantially founded, American sport has come into that golden age which for Spalding represents also a promised land. According to distinctly unofficial estimates, admittedly expressed in extremely round numbers, there are today in this country 2,000,000 golfers, 2,000,000 baseball players, 1,500,000 tennis players, 3,750,000 basketball players, and 150,000 football players. And of the sporting equipment sold in this country Spalding merchandises, at the very least, a good 50 per cent.

Many are the reasons for Spalding leadership, obvious factors of course being its age, its size, and the physical extent of its operations. With fifteen plants, in Chicopee, Massachusetts; Springfield, Massachusetts; Chicago; Philadelphia; Brooklyn; Elkton, Maryland; Greensboro, Maryland; San Francisco; and in Canada, France, England, and Australia, and with ninety-one retail and wholesale stores, Spalding admits no competitor in the variety and extent of its products. The English make good sporting equipment; the French make good rackets but extremely bad balls; but in both England and in France it is likely that the more important golf and tennis tournaments are played more with Spalding than with balls of any other make. But while Spalding volume and Spalding internationalism account for many Spalding sales, it is only fair to credit the Spalding reputation with much of the Spalding success. In the days when the popular mind regarded tennis as a sport in much the same category as croquet and in the days when golf was cow-pasture pool and knickers provoked snickers, Spalding was building up an association with the governing bodies and leading spirits of both sports which golf men and tennis men can never forget. Today the pioneering bread of the nineties is coming back tenfold upon the waters.

Furthermore, Spalding men today are sportsmen just as were Spalding men in the days of '76. Ed Thorp, one of the best known of intercollegiate football referees, is also head of the Spalding institutional department, which deals with school and college sporting orders. Howard Cann, New York University basketball coach, proclaimed best basketball player of 1920, also Olympic shotputter, is a member of the Spalding sales force. Eddie Casey, Harvard back of the Haughton régime, brightest period of Harvard football history, manages the Spalding Boston store. Sam Hardy, captain of the Davis Cup team that brought the Davis Cup back from Australia, is in the Spalding tennis department. Thomas S. Shibe, owner of the Philadelphia American League Team, world's champions, has already been mentioned as Spalding baseball-maker. With its older members closely associated with the governors of sport, with its younger members



THE LATE ALBERT G. SPALDING, COMPANY FOUNDER

J. WALTER SPALDING, CO-FOUNDER AND CHAIRMAN

themselves experts in their lines, it is not surprising that the Spalding name is known by caddy and pro, by ball boy and tournament committee chairmen, by mascot and league president.

And, finally, there is the very important element of manufacturing skill and quality standard. No simple matter is the making of sporting implements, nor is there any other class of merchandise in which the user finds an imperfection more unforgivable. And well does Spalding realize the necessity for making a golf ball exactly round, a tennis racket precisely balanced. Visit, for example, the Spalding Chicopee factory where are made golf balls and golf clubs, tennis balls and tennis rackets—items which, incidentally, lead the Spalding output in point of dollar sales. Here presides Milton B. Reach and his brother, W. G. Reach, quiet, easy-spoken, fatherly, each of whom can play eighteen hard holes in the low seventies and who are the inventors of the "matched club" idea since so widely patterned. At noon Mr. Reach and his department heads lunch at a round, white-enameled table, partake of the same excellent food served to the rank and file of office workers. They generally talk golf. Late in May there was a fire in the plant, a fire which, without doing serious damage, held in it potentialities of disaster because of its proximity to large quantities of gasoline used in rubber refining. On the day following the fire, Mr. Reach and his executives talked about fire-fighting, specifically fighting gasoline fires. On the next day, however, there was little talk of conflagration and explosion. The meeting dealt chiefly with the prospects of Glenna Collet's winning the British women's championship (she did not) and closed with Mr. Reach giving a demonstration of how a famous golf professional gets out of traps. Here perhaps is the ideal manufacturing personnel—a group of expert consumers themselves using the products of their plant.

Serious, too, are the engineering problems involved in the making of, for example, a tennis racket. The racket begins with a long, straight piece of well-seasoned ash (the ideal wood also for baseball bats). Into a machine goes the ash stick, is swiftly bent into the racket's shape, its curved portion forming the racket rim and its two ends the two sides of the racket handle. Next a third piece of ash is fastened between the sides already mentioned, and then (except in the open throat racket) a small bit added where rim meets handle. Then, because ash is a heavy wood and the tennis player insists upon lightness combined with strength, as much as possible of the ash handle is planed away and a lighter wood substituted in its place. Next the leather end-piece is added, and the racket is ready for stringing. The ideal string is made from lamb-gut (which is the same material that Albert Spalding plays on in his violin) though hog-gut is also used, and the Spalding laboratory force is busily working on a synthetic stringing material. The trick of racket-making is the combination of strength without overweight, plus imparting to what is really very much an assembled job a virtually monolithic solidity and balance. Spalding gets its ash from New England, also cures its own rubber and makes its own finish for golf balls. One of the best indications of Spalding standards of manufacture is the fact that Spalding "seconds" are widely marketed as such and sold at prices hardly lower than the "firsts" of many cheaper merchandising grades.

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Thus far, in what is presumably the story of a corporation, nothing has been remarked concerning that vital corporate item of profit and loss. Yet it is fair to say (with no implication of Spalding altruism) that contact with the Spalding firm does produce an impression of standard and reputation rather than an impression of production and price. Indeed, considering the very large estimates usually given for the national sports bill, Spalding sales (for 1929, $27,886,334) and Spalding net income ($2,050,447) appear surprisingly small. Taking the still conservative supposition that Spalding sales represent 50 per cent of the entire sport industry's income, it would appear that the public spends upon sports less than $55,000,000 yearly. On the other hand, however, it should be realized that what a man spends on sports (or rather on games, for such sports as hunting and boating are not strictly in the sporting goods picture) is much more than what he spends on the implements of sport. A man may have a day's golf bill of $20, of which not more than fifty cents is actually spent on actual implements. Furthermore, a large percentage of the statistical players-of-games belong to the extremely younger generation who play with implements that Spalding would hardly recognize as such. Golf balls are Spalding sales leaders, with golf clubs in second position. A profitable branch of Spalding trade, however, is its "institutional" business—the outfitting of schools and colleges with sporting goods and apparatus of every description. The average cost of first-class equipment for a college football player

[*Continued on page 100*]

CHARLES F. ROBBINS

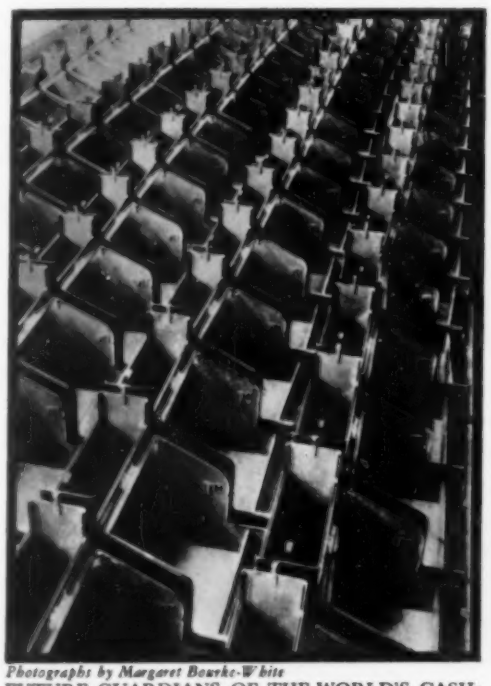
JULIAN W. CURTISS

MILTON B. REACH

H. BOARDMAN SPALDING

Temple of the Dollars, the Pounds, the Marks, the Yen

Of the Rubles, the Pesetas, the Taels, the Kronen, the Drachmas, the Florins. A saloon-keeper went to sea; a middle-aged coal-dealer went adrift. Thereafter America was taught salesmanship by John Henry Patterson. And bigger sales by John H. Barringer, whose goal is "$100,000,000." "Bigger or Bust."



Photographs by Margaret Bourke-White
FUTURE GUARDIANS OF THE WORLD'S CASH: N. C. R. CASES BEFORE ASSEMBLAGE

IN VERY round figures there are 2,700,000 National Cash Registers in thirty-seven nations (only 750,000 in the United States), and to every register there is attached a bell. Assuming, as National Cash Register does assume, that the average merchant performs 150 transactions on his machine every day, there occur across five continents and around the seven seas in the wake of the sun, 400,000,000 of the familiar clangs. That is to say, the cash concert of the nations proceeds at the rate of at least 16,000,000 percussions an hour; 4,400 a second. A motion picture reeling off but twenty-four "stills" a second produces the illusion of absolute continuity. Wherefore it may be said that in its diurnal orbit the N. C. R. bell never stops ringing at all.

The bells are tuned in Dayton, a city which N. C. R. has made the neatest and nattiest in Ohio, Mother of Presidents. There "The Cash" was born, and there it grew out of its own profits, until now it is the most international concern of its size in the United States. For, believe it or not, 55 per cent of N.C.R.'s gross business of more than $50,000,000 a year is now foreign business. Its boxes go out to the very ends of the earth; from every great city, from almost every currency in the world it draws its pay.

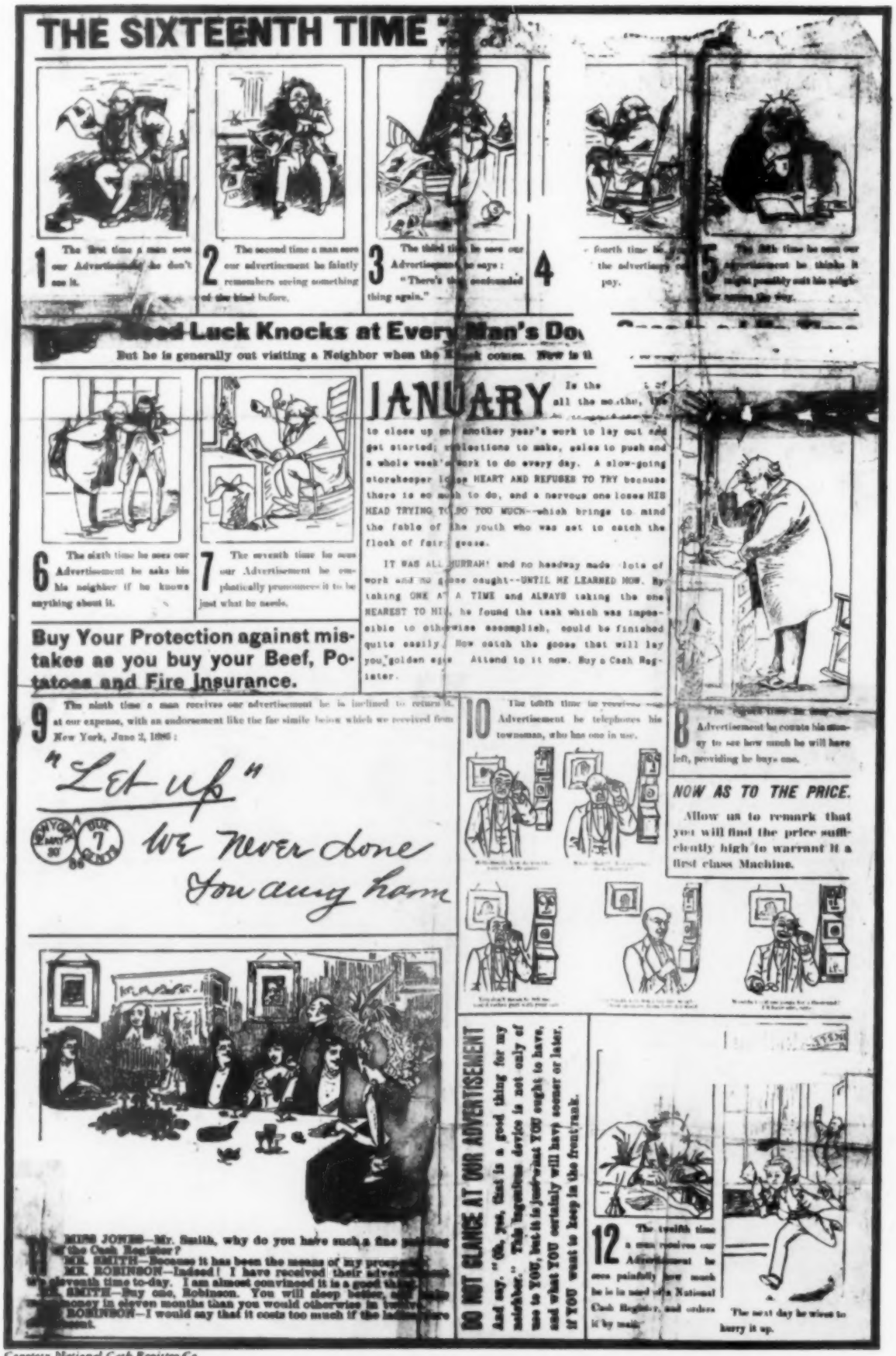
Yet no business could be more American. It produced John Henry Patterson, an exclusively American character; and John Henry Patterson invented, to a degree unmatched by any other man, American Salesmanship. In 1884 nobody wanted cash registers. They were known as "thief catchers" because they made it risky for clerks to cheat, and clerks regarded them as insults and would let no N. C. R. salesman into the store to show a model to the boss. But Patterson believed in selling through the eye; he did not trust the ear. He made a model with only three keys, had it carried in a case about the size of a physician's bag. When this was discovered, any salesman with a little black case was kept from the proprietor by physical force, so that all salesmen on the road turned against N. C. R., which is the source of many a fabulous story. This was particularly true in saloons, whose hard-boiled bartenders had been rifling cash drawers, whose proprietors were most open-minded toward the "thief catchers." It became customary for a man with a little black case to announce, as he set his boot on the brass rail, that he was not selling registers. Patterson was forced to abandon models. He got to the circular.

Circulars are now such common nuisances that millions daily are thrown into wastebaskets unopened, but in 1884 nothing could have startled prospective purchasers more severely. Not even Curtis Publishing Company had used the device quite so blatantly as Patterson now proposed. From each of ten salesmen this unruly manufacturer obtained a list of 500 prospects, which gave him a total list of 5,000. Into his meager factory he hauled a carpenter and six undergraduates from a commercial college. While the carpenter built eighteen bins, the boys addressed eighteen envelopes to each of the 5,000 prospects. Patterson himself wrote advertising matter about his cash registers—and such advertising matter. He did not believe in mere announcement, which was the style of the day in conservative circles. He wanted to convince. He was certain that if he could make people think about it he could place one register with every 400 of population. (N. C. R. has now placed one register in the United States with about 162 of population.) Every day for eighteen days a circular went to each prospect. It was unpardonable, peace-disturbing. One merchant returned his ninth letter with the notation: "Let up. We never done you any harm." (See cut on page 68.) The relentless Patterson sent him nine more. Worse, he borrowed the "testimonial" from the disreputable patent medicine business. Saloons and cheap restaurants were the most enthusiastic customers, and such is the base upon which The Cash is built.

CRATES THAT CAN BE DROPPED FROM SHOULDERS TO CEMENT FLOORS

Homeric breed

By 1889 Patterson was spending $4,000 a month ($5.24 per register) in circularizing. Since he never really had any capital, expanding entirely on profits from sales, people thought him crazy. But his circulars did not replace salesmen. By no means. Though not a good salesman himself, Patterson became the creator of the most high-powered breed of salesmen on the American road. The early salesmen are now Homeric figures—


THE SIXTEENTH TIME
1 The first time a man sees our Advertisement he don't see it.
2 The second time a man sees our advertisement he faintly remembers seeing something of the kind before.
3 The third time he sees our Advertisement he says: "There's that confounded thing again."
4 The fourth time he sees the advertisement he says: "Oh, pshaw, this thing is a fraud. I've seen it three times and it's a fraud sure."
5 The fifth time he sees our Advertisement he thinks it might possibly suit his neighbor running this way.
Good Luck Knocks at Every Man's Do
But he is generally out visiting a Neighbor when the knock comes. Now is t
6 The sixth time he sees our Advertisement he asks his neighbor if he knows anything about it.
7 The seventh time he sees our Advertisement he emphatically pronounces it to be just what he needs.
JANUARY
Is the worst of all the months, for to close up one another year's work to lay out and get started; collections to make, sales to push and a whole week's work to do every day. A slow-going storekeeper loses HEART AND REFUSES TO TRY because there is so much to do, and a nervous one loses HIS HEAD TRYING TO DO TOO MUCH—which brings to mind the fable of the youth who was set to catch the flock of fair geese.
IT WAS ALL HURRAH! and no headway made—lots of work and no geese caught—UNTIL HE LEARNED HOW. By taking ONE AT A TIME and ALWAYS taking the one NEAREST TO HIM, he found the task which was impossible to otherwise accomplish, could be finished quite easily. How catch the geese that will lay you golden eggs Attend to it now. Buy a Cash Register.
8 The eighth time he sees our Advertisement he counts his money to see how much he will have left, providing he buys one.
Buy Your Protection against mistakes as you buy your Beef, Potatoes and Fire Insurance.
9 The ninth time a man receives our advertisement he is inclined to return it at our expense, with an endorsement like the fac simile below which we received from New York, June 2, 1886:
"Let up"
We Never done You any harm
10 The tenth time he receives our Advertisement he telephones his townsman, who has one in use.
NOW AS TO THE PRICE.
Allow us to remark that you will find the price sufficiently high to warrant it a first class Machine.
MISS JONES—Mr. Smith, why do you have such a fine painting of the Cash Register?
MR. SMITH—Because it has been the means of my prosperity.
MR. ROBINSON—Indeed! I have received their advertisement the eleventh time to-day. I am almost convinced it is a good thing.
MR. SMITH—Buy one, Robinson. You will sleep better, and make more money in eleven months than you would otherwise in twelve.
MR. ROBINSON—I would say that it costs too much if the ladies were present.
DO NOT GLANCE AT OUR ADVERTISEMENT
And say, "Oh, yes, that is a good thing for my neighbor." This ingenious device is not only of use to YOU, but it is just what YOU ought to have, and what YOU certainly will have sooner or later, if YOU want to keep in the front rank.
12 The twelfth time a man receives our Advertisement he sees painfully how much he is in need of a National Cash Register, and orders it by wire.
The next day he went to hurry it up.

Courtesy National Cash Register Co.

AMERICAN HIGH-PRESSURE SALES, NOW WORLD FAMED, HAD FOR PIONEER JOHN HENRY PATTERSON, WHO LAUNCHED EIGHTEEN SUCCESSIVE CIRCULARS UPON 5,000 CASH REGISTER PROSPECTS IN 1884. THIS IS PATTERSON'S IDEA OF THEIR EFFECT

John Watson; Fred High; U. E. Blood of Chicago; John Crawford of New York; the Cranes (Jim and Joe) of Dayton, who had for office boy Mr. Hugh Chalmers; C. H. Lord, of Boston; and Robert Callahan of Washington. Most picturesque of all, a very Hector, was A. C. McMahon, known as the world's premier salesman, who put cash registers into Marshall Field and into every concession at the Chicago Fair. Worthy descendants of these heroes in more recent times are Richard Grant, the man who put Chevrolet sales ahead of Ford in 1928 and is now salesman-in-chief of General Motors; and less directly connected with sales, Alvan T. Macauley, president of Packard Motor; Hugh Chalmers, director of Chrysler Corp.; Charles F. Kettering, vice president of General Motors in charge of research.

Patterson himself was certainly a man touched with Napoleonism. He startled Dayton, the Miami Valley, the whole Union with methods so radical as to seem unethical. He upset all existing practice with his commission basis (then used for cheap, risky goods); his guaranteed territories; his fat, tempting commissions, with the sky the limit on a salesman's earnings; his quota system, by which each salesman was to sell his quota, not once only, but once a year—an absolutely unheard-of idea. Since then, though there was talk of a cash register saturation point in 1890, cash register sales have mounted steadily.

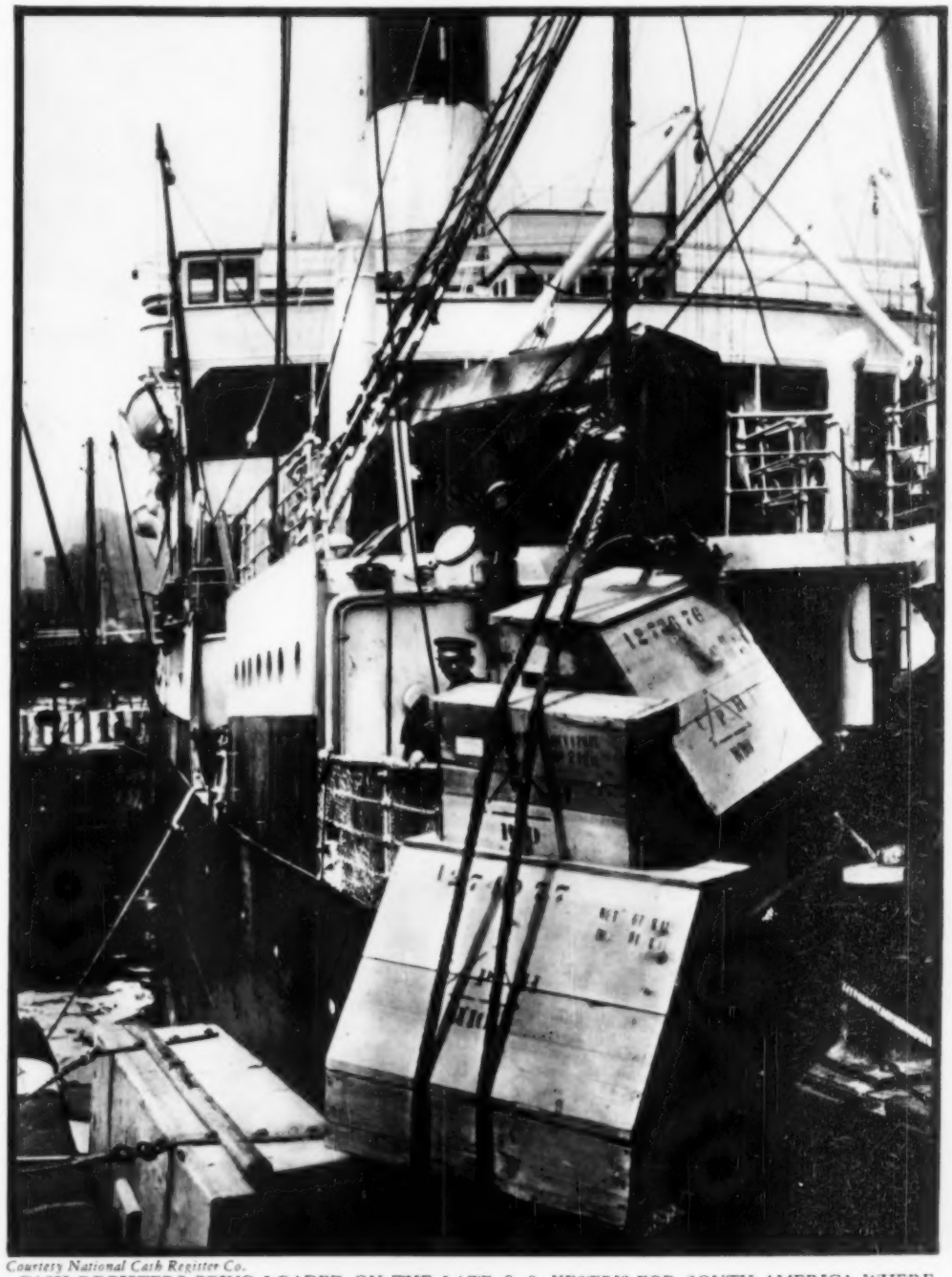
In 1893, preparing for the panic, Patterson instituted the startling practice of "conventions." J. H. had an eye for panics and could (with the help of a volume called *Benner's Prophecies of Future Ups and Down in Prices*) predict them to a year, just as, in 1913, he predicted the Dayton flood one full day before the town was drowned. His habit was to meet every panic head-on, double his selling pressure; and during that memorable year of 1893 he visited fifty towns in fifty-one days, holding conventions of salesmen in each. Now, every spring and every fall, the general manager, the treasurer, the sales manager, sometimes President Frederic B. Patterson, son of J. H. Patterson, speak all over the country, demonstrate new models, announce policies. They speak to some 1,500 salesmen many of whom were once neophytes at the home office where they were trained. Those salesmen who turn in more than $30,000 business a year are members of the famous 100-point club which next year goes to Havana for fun at the company's expense.

By means of this sales system N. C. R. has girded the planet with its bells; and although it employs native salesmen in each country, native agents, native managers, assisted by a few American supervisors, still the sales system in Constantinople or in Rio bears the stamp of that developed by John H. Patterson. Besides its foreign agencies flung far and wide through the minor nations, N. C. R. has eleven sales subsidiaries—Canada, Great Britain, South Africa, Australia, France, Switzerland, Spain, Italy, Germany, Austria, Czechoslovakia, each with the name of N. C. R. translated. Thus N. C. R. became the principal temple of all the gods—the Dollars, the Pounds, the Marks, the Francs, the Rubles, the Pesetas, the Taels, the Yen.

Daytonian accuracy

That the entire world submits to the judgment of Dayton in its civilized retail exchange of money for goods is a credit to Salesmanship, but also to Accuracy. An inaccurate cash register would be of use only in Alice's Wonderland. Elsewhere, clerks will be accused; a whole store system, a whole bank may be disrupted if one of 600 or 700 wheels is a fraction off. This Daytonian accuracy is no trifle. Whereas a Wright Whirlwind nine cylinder engine has 3,038 parts, a National Cash Register has between 8,000 and 14,000; for all the various types of machines, there are some 50,000 parts. Old-timers at The Cash—and there are many of them—agree that the tool room is the secret of accuracy. N. C. R.'s investment in tools is about $8,000,000. In 1929 the company spent $1,769,230 on tools, plus a tool maintenance charge of $371,218.

The Accuracy fetish at N. C. R. dates from 1894. In that year $50,000 worth of registers shipped to England (largest foreign order to date) were returned because they added faultily. Amid speeches and pyramids Patterson had all of the returned English



Courtesy National Cash Register Co.

CASH REGISTERS BEING LOADED ON THE LATE *S. S. VESTRIS* FOR SOUTH AMERICA WHERE TRADE ROUTES ARE MOST PERILOUS. WITH THESE SCIENTIFIC CRATES N.C.R. PENETRATES EVEN TO BOGATA, COLOMBIA

registers piled in a corner of the factory, put glass around them, kept them on exhibition for years. Tradition has it that he dramatically destroyed many of them, and this is reasonable to suppose, because Patterson is known to have used an ax on faulty registers in sight of his employees. Once he threw a crated register down the elevator shaft to see if the crating were any good. This habit of dropping registers around is very prevalent at Dayton. In the shipping department there is a shelf thirty-two inches high, and every now and then a register embodying a new invention is shoved off it in its crate. There are also long-distance tests—machines are jolted 4,000 or 5,000 hours, not gently; or they are punched several million times, the equivalent of 100 years of use, and then torn down for inspection.

Accurate in Dayton, the machine must also be accurate in London, Buenos Aires, Calcutta. It must cross the Red Sea where ships' hulls are too hot for hand to touch. It must get to Bogotá, which, high up in the mountains of Colombia, is at the end of the most hazardous of all the trade routes of the world, over all of which Cash's crate is famed. Though the crate is simple enough to look at, it is the result of such study of the packing art that N. C. R.'s marine insurance losses, and consequently premiums, are enviously low.

Napoleon of Ohio

A business which is so nearly a mondial monopoly, a business so intimately linked with money, might presuppose a financier. Actually John H. Patterson, the Napoleon of Ohio, was no kind of financier. He died in a drawing-room of the one o'clock train from Philadelphia to Atlantic City on May 7, 1922, and for his fortune he was indebted almost not at all to Capital. Mr. Patterson was originally a coal-dealer in Dayton, an inglorious town in those days. On the side he ran a general store at near-by Coalton, Ohio. He discovered that he was running a loss of $6,000 a year instead of making the profit of $12,000 which the figures said belonged to him. One day he observed that certain miners were waiting to buy from certain clerks and would buy from no others. Thereupon, he seized a miner's shopping basket and found that the man had been charged with only half of the goods received. He fired his whole force of four, and he sat down to brood. Now he discovered that cash is the root of business, without which the figures, though balanced, are mere dreams. He must organize his cash drawer, safeguard it, systematize it. He heard about a crazy contraption being made in Dayton which publicly registered sales. It was expensive ($50 a machine). He telegraphed for two. He always did things that way.

It took nerve to telegraph for two cash registers in 1882. There were only about a dozen in the world, and they were regarded by the good citizens of Dayton as so many jokes. The idea of such a machine had been suggested to a Dayton saloon-keeper named James Ritty, who was taking a vacation to Europe in 1879 and was impressed by the indicator in the engine room of the ship which tallied the revolutions of the propeller.

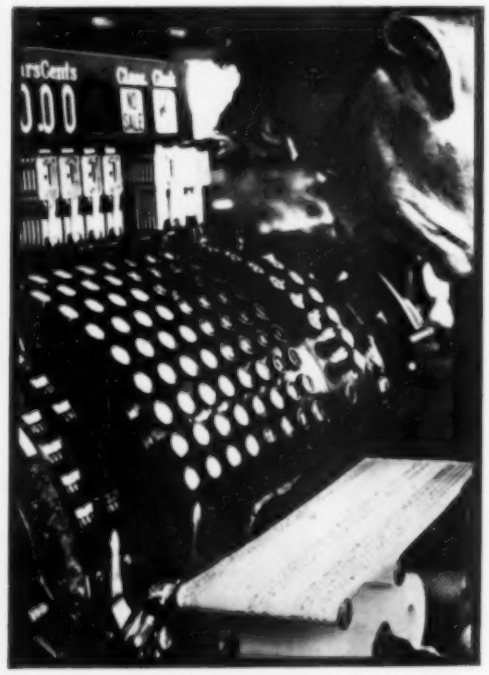
Having installed the registers—one in his retail store, one in his coal business—having stopped small leaks, John Henry Patterson failed to see his opportunity—which was perhaps the most astonishing fact in his astonishing career. He sold his share of the coal business to his brother Stephen and went West to buy, of all things, a ranch. On the porch of the famous Antlers Hotel in Colorado Springs, he and his brother Frank fell into conversation with a New England merchant who said he had been able to leave his store in the hands of clerks because it was protected by a cash register. Had they heard of the cash register? They had. That night the Brothers Patterson conferred. With typical precipitancy John hauled his brother back to Dayton. They arrived at night and went directly to George Phillips, who owned the controlling interest in Saloon-keeper Ritty's patents. They bought control for $6,500 and then went around to the club to announce their entrance into the manufacturing business. They were the joke of the evening—Phillips had been trying to unload his stock all over town. Worried, Patterson returned to Phillips the next day and offered him $2,000 if he would rescind the contract to buy. Phillips said he would not take the stock back as a present.

Sunk, middle-aged

Here was Dayton's future international figure sunk into an insolvent company with almost all his capital, and already forty-one. He had served the 100 days in the Civil War, graduated from Dartmouth at twenty-three,

SPRINGS TESTED TO 1/200 OF AN OUNCE

WHEELS THAT CAN TURN ¢'S INTO $'S



ACCURACY—ONE OF SEVENTEEN INSPECTIONS

and, returning to Dayton, had found himself too old to start in any regular line of business. He had been toll-collector on the canal; he had sold coal; but now he was adrift and well into his middle-age. There was only one possible course of action. He had to sell these things in a hurry to get out of the hole.

Though designed to protect the cash drawer, the machine that Patterson had bought was separate from the drawer; its function was merely the moral one of recording the sale, and the record of each successive sale was lost. Patterson's first step was to incorporate the drawer into the register, so that it could not be opened without pressing a key. Next he installed the detail adder, which told how many times a key had been pressed; then a detail adder which indicated the total for each key in dollars and cents; then a machine which added all these keys together into a daily total of dollars and cents. This register cost from $300 to $350, and being built to serve the saloons, had an unchangeable grand total locked under its metal lid—positive indicator of theft. Thus far it was an automatic policeman. And with that Patterson embarked upon his utterly astounding career of sales.

Courtesy National Cash Register Co.
TO JOHN HENRY PATTERSON AND HIS HORSE *SPINNER*, DAYTON HAS ERECTED A MONUMENT

So much for the Homeric days; but in 1925, three years after Patterson's death, enter a violent contrast. In that year The Cash was sold to the public by one of the most outstanding financial arrangements of the Coolidge era. The deal was handled by Clarence Dillon soon after his $180,000,000 Dodge Motor deal. It is worth noting for certain peculiarities of its own and because it is characteristic of recent American history. Patterson's business was divided into 1,500,000 shares, valued at $50 a share, giving N. C. R. a valuation of $75,000,000. More than two-thirds of the business was offered to the public—1,100,000 "A" shares at $50 each, with a minimum preference as to dividends of $3.00 a share over the remaining 400,000 shares which were kept by Patterson's family, executives, and employees. These 400,000 shares were called "B shares" and controlled the company as long as things went well; and of them, Frederick B. Patterson, J. H.'s only son, held a majority that gave him control.

The chief peculiarity of this transaction had to do with the employees of the company. Patterson was a tyrant and one of the most benevolent tyrants that ever lived. He gave, as we have noted, large commissions to his salesmen, and he gave generous "cuts" in the profits to everyone concerned. Thus, in 1923, the year after Patterdon's death, his employees got nearly half the profits—$2,850,000 out of $6,600,000, a remarkable incident in industrial history. This situation presented Clarence Dillon with a tough banking problem, for there were two radically different ways of looking at the net profits. So the circular offering N. C. R. stock gave *two* sets of profits for the preceding years. In one column were the total net profits; in another were the profits *after* deducting the employee's shares as follows:

	After deducting employees' profit-sharing participations.	*Before deducting employees' profit-sharing participations.*
1919	$4,640,414.00	$6,199,613.00
1920	3,663,712.00	5,789,600.00
1921	2,580,872.00	3,556,348.00
1922	3,181,421.00	4,974,801.00
1923	3,689,571.00	6,539,889.00
1924	5,063,547.00	6,534,822.00
1925*	5,942,304.00	7,807,596.00
1925—	6,070,821.00	7,915,000.00

* *As it appeared in circular due to underestimates* — *As finally reported*

And it was arranged that in lieu of their customary share of the profits the employees should receive 10 per cent of the total stock, that is, 150,000 of the 1,500,000 shares. This done, the bankers capitalized the company on the basis of the total net profits, or at about 10 times earnings ($75,000,000 on the basis of $7,800,000 estimated current net profit). As compared with the millions which employees previously received, they have received only $450,000 per annum in 1927 and 1928, and $600,000 in 1929.

While no business can be understood except in terms of its past, no business can be measured except in terms of its future. No just analysis can be made of The Cash without an understanding of two men: John

[*Continued on page 110*]

The Five-Fingered Cabala

John Henry Patterson believed in the eye, and installed in the factory hundreds of easels, supporting great pads of coarse paper three feet long by two wide. As if at school the problems and conclusions of each conference were recorded on these pads, and today two or three executives never gather together without a pad. J. H.'s favorite symbol was a pyramid set on a columnar base—it represented his idea of factory organization, and by dividing it into sections he could show how component parts of N. C. R. ought to support each other. The factory still builds pyramids. Patterson divided almost every idea into five principle parts, a habit sprung from counting off points on his fingers. This he developed almost to a cabala, and the Cash still bows to the number five. Here is an N. C. R. pyramid analyzing one of Mr. Patterson's favorite subjects:

5 FOOD TYPES NECESSARY FOR LIFE

1 Proteins	2 Fats	3 Carbohydrates	4 Mineral Salts	5 Water
Make and repair the body. Beans, meat, cheese, peas, oatmeal, eggs, nuts, etc. Very important food element.	Produce heat. Olive oil, butter, nuts, fat meat, cream, cheese, etc.	Produce heat and energy.	Build and repair bones, nerves, and muscles.	Aids indigestion.
Necessary in small amount only.	Excess delays stomach digestion.	Cereals, Vegetables, bread, macaroni, fruits, etc.	Greens, lettuce, cereals, vegetables, fruits, etc.	Dissolves waste products of food.
No storage place in body.	Little required in summer.	Most abundant food element.	One twenty-fifth of body weight.	"Flushes" poisons from body.
Excess digested, but thrown out unused.	Reserve storehouse provided in body.	All starchy foods and sugars.	Small but important part of food.	At least 6 or 8 glasses daily.
Waste products are poisonous.	High food value.	Starchy foods require thorough cooking.	Spinach and tomatoes rich in iron.	Cool but not cold.
Excess the most common dietary error.	Laxative.	Fruit sugars require little or no digestion.	Lost in boiling.	More in summer.
Most expensive foods.	Fried foods difficult to digest.	May be eaten more freely.	Saved in baking.	Appearance often deceptive.
Avoid excess.	Olive oil, 100 per cent food.	Increase the fat of the body.		"Old oaken bucket" often a danger.
		Generally laxative.		When in doubt boil it.
		Excess stored in liver and muscles.		Moderate amount with meals.

Skyscrapers: Pyramids in Steel

[*Continued from page 61*]

of construction, his loss of interest on the building during half that period, and his taxes on the land during construction. The theory is that anyone else replacing this building would be obliged to pay the same charges. But the old mortgagees of a generation ago would reply that the value of the building for purposes of loan is its value in case of the mortgagor's default and a consequent foreclosure sale and that no one will buy a building, which has proved unable to pay its bond interest, on a replacement basis.

Again it is not unusual for the mortgage houses to loan up to 75 or 80 per cent of the cost to a particular borrower (provided this percentage coincides with 65 to 70 per cent of a fair value). To which the old-fashioned mortgagee would simply not reply at all . . .

And finally the principal activity of the houses of issue is directed not to the establishment of a frozen, time-proof, everlasting security for the loan (though the best houses are conscientious to the last degree) but to the creation of a sound living investment. They are much more concerned to see to it that the question of foreclosure should never arise than to insure that, if it does, no one shall be hurt (an impossible goal in any case) and more interested in earning power than in brick and mortar value. The good houses, moreover, intend to stand by their issues. The old advertising slogan of S. W. Straus & Co. (forty-nine years without loss to an investor) did not mean that Straus had had no bad issues but that it had made its bad issues good. And the nationwide percentage of loss on such investments is actually ridiculously low—as low in some years as 3/100,000 of 1 per cent.

The procedure of S. W. Straus & Co. in passing upon an application for a mortgage loan may be taken as typical of the best practice. A committee of real estate, financial, and economic experts first considers the question whether this building in this location in the present rental condition of this particular city is capable of paying an adequate return on the investment. The elements of this problem are extremely complicated and involve matters to which we shall return later in this series. If the committee's finding is favorable, the plans for the building go to the engineering department, which considers the proposed structure from the point of view of its soundness and efficiency. The engineering department may, and frequently does, suggest changes. In the great apartment house at 277 Park Avenue the ten interior courts of the architect's plan were changed to one large court with most satisfactory results. When the engineering department has finished, the costs of the building are worked out. The promoter's own costs are set down in one column and in a parallel column the revised costs based upon Straus' experience of similar buildings and land purchases. The promoter may have gotten his land at a bargain or he may have swelled his building estimates to increase the loan, and the Straus column, which is designed to show sound or prudent investment cost, may therefore differ from his in either direction. The value of the project is then further checked by capitalizing the anticipated income from the building. If this figure does not accord with the Straus column, the loan is suspect. It is usual in computations of this kind to figure in returns per cubic foot. The return per cubic foot must exceed the required return to pay interest, operating expenses, upkeep, amortization, etc. by an amount sufficient to make the investment really profitable.

If the loan is made, a credit is established with the trustee under the mortgage (usually the Straus bank), and payments are made only against work done in accordance with specifications as assured by Straus' field engineers. The proceeds of the sale of bonds are segregated in the hands of the trustee. And a bond for completion is taken with a surety company or a responsible individual. The undertaking of such a bond is, preferably, that the surety will complete the building planned if the promoter fails, and the fee is usually 1.5 per cent of the cost of the building. No. 1 Fifth Avenue was built, in this way, by the surety companies.

With these safeguards it is apparent that the situation found to exist at the time of the bankruptcy of the G. L. Miller Company, a

40 WALL STREET CORP.

TENTATIVE ESTIMATE OF EARNINGS

	Year ending May 1, 1932	
	75 per cent rented	*90 per cent rented*
Operating revenue (*rent, electricity, and concessions*)	$3,900,000	$4,680,000
Operating expense (*ground rent, mortgage, interest, real estate taxes, management, insurance, operation, etc.*)	3,015,000	3,065,000
Operating profit (*before depreciation and amortization*)	885,000	1,615,000
Depreciation and amortization		
Depreciation (*2 per cent of $14,650,000*)	293,000	293,000
*Amortization of bond discount (*over fifteen and twenty-nine years*)	108,000	108,000
*Amortization of brokers' commissions (*over six years*)	60,000	72,000
*Amortization of tenant changes assumed (*over six years*)	112,000	135,000
Total depreciation and amortization	573,000	608,000
Income before federal and state taxes, etc.	312,000	1,007,000
State taxes (*no federal taxes first and second years—a/c 1929 loss*)	5,000	5,000
Income before preferred dividends	307,000	1,002,000
Preferred dividends: (*7 per cent of $3,000,000—first four months; 7 per cent of $4,000,000—balance of time*)	280,000	280,000
Net income to 40 Wall Street Corp. common	27,000	722,000
Amortization of first mortgage	191,000	191,000

**Other deferred expense items are included in building cost and in the depreciation at the rate of 2 per cent a year*

ITEMS OF COST OF THE BUILDING

Land		$ 4,750,000
Building		12,420,000
Builder's fee		800,000
Architects and engineers		515,000
Commissions on leases		475,000
Interest during construction:		
On first mortgage	$211,000	
On second mortgage	300,000	
Advances	250,000	
Preferred stock	160,000	
Mortgages assumed	29,000	
	$ 950,000	950,000
Taxes		175,000
Discount on financing		
First mortgage at 10 per cent	$1,250,000	
Second mortgage at 15 per cent	975,000	
	$2,225,000	2,225,000
Mortgage and stock tax, legal printing		300,000
Tenant changes		900,000
Cancellation of leases, purchase contract		315,000
Contingencies		175,000
		$24,000,000

southern house of issue, is extremely unlikely to repeat itself. The Miller Company had neglected bonds for completion in many cases and had not segregated proceeds, and the holders of some of its bonds were remitted to their rights against a cellar hole and a pile of rocks.

The cost of financing of this nature may amount to 10 per cent of the total investment. The cost of the mortgages on The Manhattan Company Building at 40 Wall Street was $2,225,000 on a total investment of $24,000,000. Financing in this case was handled by a first mortgage bond issue of $12,500,000 sold by G. L. Ohrstrom & Company. Ohrstrom and the Starrett brothers then formed the Starrett Investing Corporation, subsidiary of The Starrett Corp. which owns all the Starrett interests, and with money provided by the sale of its stock they were able to float a second mortgage issue of $6,500,000 and a preferred stock issue of $4,000,000. The bonds are to be amortized in twenty-eight years and net earnings thereafter will go to the Starrett Investing Corporation and an associated syndicate, owners of the common stock.

The junior financing in the case of The Manhattan Company Building was not necessarily typical. In the Empire State Building the funds required over and above the first mortgage of $27,500,000 to the Metropolitan Life Insurance Company were provided by the syndicate of owners. In other cases, as in the News Building and Chrysler Building, in New York, these funds were altogether supplied by the owner corporation or the promoter. But even in the case of skyscrapers owned by great companies or by extremely rich individuals it may be good policy to raise part of the equity money by a sale of preferred stock paying 6 per cent and to be retired out of earnings in, say, ten years, leaving the profits of the building to revert to the owner and holder of the common stock after that time. And there are numerous financing schemes, as that of the Fred F. French companies, which involve no investment by the promoters. The French Plan involves a first mortgage for about 50 per cent of the cost of land and building, an issue of preferred stock for the balance required, and a two for one issue of

[*Continued on page 75*]

Skyscraper

Financiers

Keystone

A. E. Lefcourt

MR. LEFCOURT entered the building business as a garment manufacturer. He was a Jewish boy from the east side who had become a clothing dealer by way of a bootblack stand and a department store. This was in the days of the east side sweatshops. The garment workers were accustomed to parade on lower Fifth Avenue during the lunch hour in such swarms that the Fifth Avenue shops suffered, and the shop-owners howled. Everyone admitted the evil but, lacking a Cossack regiment, there seemed to be nothing to do about it. Mr. Lefcourt recognized the evil and did something. He moved the garment trades west of Broadway and in so doing he ended the sweatshop, for the new lofts he built were well lighted and well ventilated and roomy. It was not an easy thing to do. The banks were skeptical, the employers saw no good reason to move, and the only tenant he had when he started his first building was himself.

In 1923 Mr. Lefcourt withdrew from the garment industry and devoted himself to building. He is now fifty-three. His real estate holdings amount to about $25,000,000, he has built over about 125 acres of land, and his buildings if placed end to end . . .

Mr. Lefcourt's recreation is swimming. He is a member of the Polar Bears, an organization devoted to bathing in ice water.

Wide World

Irwin S. Chanin

MR. CHANIN'S career is a monument to credit. He is a Russian Jew of Brooklyn birth, Ukrainian childhood, and New York success. In 1919, after a War experience in which he worked in poison gas laboratories near Cleveland, he set out to become a builder. He had $200, the girl he was engaged to had $300, and the houses he intended to build were to cost, including the land, $10,000 apiece. Friends of his father loaned him $500, and the local banker of Bensonhurst, for some good reason, loaned him the $19,000 balance. Within five years he was approaching a Brooklyn title company for financing on an $850,000 plot in that city; eight months later he had started and already sold two buildings in Brooklyn and was on his way across the river, and at the present time, in his thirty-eighth year, he has built about 150 buildings in the two cities (including the Roxy Theatre, the Chanin Building, the Hotel Lincoln, the Biltmore Theatre, and the Fur Center Building) and is said to own, with his brother Henry, real estate holdings worth $100,000,000. He is interested in theatres. As a boy he used to sit in the galleries and had to walk in by side entrances. He disliked that, and in his theatres everybody goes in through the same doors. He has discovered that "money is the easiest thing in the world to get. You just have to have ideas and it will come to you—why, it will pour in." Mr. Chanin does not mean that he takes money lightly: he is famous for his bargain-driving. But that money is the easiest thing in the world to get. You just have to have ideas.

George Lewis Ohrstrom

IT USED to annoy Robert Maynard Hutchins of Yale and now president of the University of Chicago to be called "brilliant and young." If such a disposition is common among young men to whom these two adjectives are applied, it may safely be assumed that George Lewis Ohrstrom has frequently been annoyed. The adjectives pursued him while he was second lieutenant in the U. S. Air Service, attached to the Fifth Army Corps of the Second Army, and when he achieved the distinction of bringing down the last enemy plane to fall during the War. He was still hearing them and trying not to when, in 1919, he returned to the University of Michigan to take his Bachelor of Arts degree. Perhaps he did not hear them during his pre-University days when for experiment he indulged in a little lumbering and railroad construction. But they were within earshot after his graduation when he started work with P. W. Chapman & Co., distributors of securities. And they blazed out again in 1926 when, at the age of thirty-two, he founded G. L. Ohrstrom & Co., Inc., investment bankers, became its president, and started out to guide its destinies.

Today he is one of the youngest investment bankers concerned with skyscraper construction, finances all the Starrett brothers projects, and is himself one of the founders of the Starrett Investing Corporation. His *pièce de résistance* thus far has been the shrewd and able financing of The Manhattan Company Building which, but for the shiny Nirosta steel spire atop the Chrysler Building, would be the tallest in the world.

Kaiden-Keystone

Louis Abrons

WHEN Louis Abrons wishes to express admiration for a man of business he calls him "dynamic."

Mr. Abrons is a native New Yorker and a Jew. As a small boy he swam in the East River off Eighty-sixth Street. It is a characteristic incident of the lives of all real estate operators and builders that at some point in their careers they buy their boyhood homes or rebuild the office buildings in which they were first employed. (It is getting to be very dangerous to employ a bright young man in a skyscraper of any considerable size.) But none of them have ever thought of returning to glorify the old swimming hole. None until Louis Abrons did it with his Carl Schurz Park development on that same east side.

Mr. Abrons is president of the new operating house, General Realty & Utilities Corporation. He is still young, perhaps forty-two. As a builder in the firm of Harby, Abrons and Melius he helped build up the Washington Square district. He is a believer in New York real estate and idealistic in his hopes for it, as members of his race often are. And he may well have as much to say about the realization of those hopes in the next twenty years as any man living. His slogan is: "Romance in business."

U. & U.

Simon William Straus

SIMON WILLIAM STRAUS and the first mortgage bond of commerce are practically synonymous. The tradition is that Mr. Straus invented the real estate bond. If he did, it was rather an application than an invention for all the elements existed long before Mr. Straus saw Ligonier, Indiana, or his father left Rhenish Prussia. But there can be no doubt at all but that the modern real estate bond invented Mr. Straus. Without its intervention in his life neither Mr. Straus nor the banking house which bears his name would now be anywhere in particular, to say nothing of where they are. Which is about the top of the real estate securities business.

Mr. Straus is credited by the promoters of great buildings with being one of the few men in New York who knows anything about the financing of their schemes. He has financed, among others, the Straus Building in Chicago, General Motors Building in Detroit, and the Eastern Ambassador Hotel at Atlantic City, the mortgages for each of these buildings exceeding twelve millions.

Mr. Straus' chief activity outside his business is, properly enough, Thrift. He is the founder and president of the American Society for Thrift which has been instrumental in having Thrift added to the curriculums of hundreds of schools. He is the author of the *History of the Thrift Movement in America*. And he writes a weekly essay on Thrift which is syndicated in five hundred newspapers.

It is Mr. Straus' belief that the American public overeats.

Blank-Stoller

William Hawxhurst Wheelock

UNLIKE most of Manhattan's great real estate operators, Mr. William Hawxhurst Wheelock was not born in a foreign country or in great poverty or in both. When he was a child he attended the Cutler School, a private school in New York City where the little boys wore black hats with maroon "C's" on them and sometimes played football or some such game at Van Cortlandt Park. After Cutler he went to Harvard and now belongs to the Union, Racquet, and University clubs. He is also fond of duck shooting.

He is probably the most energetic member of his well known firm, Brown, Wheelock: Harris, Vought & Co., Inc. and claims that his business gives him his greatest pleasure. His first great piece of work was assembling the land for the Pennsylvania Railroad Station. Probably his greatest piece of work was assembling the land between Forty-ninth and Fiftieth streets and Lexington and Park avenues for the now-building Waldorf-Astoria.

His associates are rather in awe of his tremendous energy. In summer he is particularly formidable, constantly mopping his brow, constantly in a hurry. He is fifty-four years old and looks less; he is about five feet ten and very stocky. He is a trustee of the Presbyterian Hospital and a Republican.

Kaiden-Keystone

Frederick Brown

THE name on the door is Frederick Brown. There is no further qualification or description. Inside are two bookkeepers, one stenographer, one secretary, one telephone (switchboard) operator, and a smallish, fresh-faced gentleman of sixty. From the photographic reproductions of Rembrandt, Van Dyck, Rubens, and Gainsborough on the walls one might think oneself in the presence of a magazine editor or a retired manufacturer of overalls. Actually one is in the presence of the largest individual real estate operator in the United States. And the originals of the photographs are all his.

Some forty years ago he arrived in New York from Carlsbad where he and his father before him and his grandfather before that had lived. Not poverty but love brought him to America. At first a clothing dealer, he became a real estate operator through the purchase in 1903 of 21 East Fourteenth Street. His total Manhattan transactions are now estimated at $500,000,000, his annual business at $60,000,000, his fortune from $40,000,000 to $50,000,000, and his opinion on a piece of real estate at par. He bought land which later produced the Hotel New Yorker, the Savoy-Plaza, the Lincoln Building, and the Sherry Netherlands. He was offered the Turkish embassy. He gave a million dollars to The New York Federation for the Support of Jewish Philanthropic Societies and to New York University a building on which they were paying an annual rent of $100,000. He hates all forms of publicity. And he believes in the city of New York and in its skyscrapers. Any building under twenty stories is to him only a taxpayer. "New York will be very beautiful," he says. "It will be a city of towers."

[*Continued from page 73*]
common stock, one share to each purchaser of a share of preferred and one share to the Fred F. French Investing Company, Inc. The entire earnings go first toward paying the 6 per cent cumulative dividends and then toward redeeming the preferred stock itself, which is paid off in about ten years and the profits thereafter shared by the French Company and the former preferred stockholders. Another similar plan combines the preferred stock in the particular building with common stock in a holding company which, in turn, owns the common stock of the building and a number of other buildings. The purpose is to combine preferred ownership in a specific property with equity holdings in diversified properties.

In all such set-ups the effect is to reduce the owner's investment to a minimum and to increase his ultimate profit. And great profits have been so made. But in skyscraper construction the mortgage houses prefer that the promoter, or the promoting syndicate, make a large enough investment so that he can be counted on to make a further contribution to protect his original investment should it be necessary. Since public participation direct or indirect has made possible most of the great buildings of our time, the protection of existing investments by every possible means is of prime importance to the bankers.

Some Famous Mortgages

	First mortgage bond issue	*Amount of first mortgage*	*Independent appraisal of value of land and building at time of first mortgage*
Land Owned in Fee			
50 Broadway Building		$4,500,000	$7,300,000
165 Broadway		9,500,000	16,080,007
Fuller Building		5,000,000	7,550,000
Fifth Avenue and Forty-third Street (Lefcourt National)		6,000,000	10,500,000
Lincoln Building		16,000,000	25,869,000
Leasehold Properties			
80 Broad Street Building		$2,800,000	$4,235,000
Squibb Building		4,500,000	6,800,000
500 Fifth Avenue		7,000,000	11,500,000
Chanin Building		6,500,000	11,200,000
Chrysler Building		7,500,000	13,000,000
Graybar Building		10,500,000	18,000,000

Kaiden–Keystone

Robert Dowling

MR. DOWLING is the romance of real estate. His father was a Forty-niner. He was himself born among the jumping frogs of Calaveras County. He went into real estate in New York with a young wholesale fruit dealer. He made a fortune out of it. And now, in his sixty-third year, still young, still dressed as though Augustus Thomas had written him, a New Yorker and a metropolitan, he goes on as he began.

His office is in an old-fashioned six story building. His office force arrives from half-past nine to half-past ten. He himself arrives at half-past twelve. And leaves for luncheon at one. He enjoys prize fights as well as any *aficionado* of the good old days can be expected to enjoy them, and he understands prize fighters. And in knowledge of New York real estate he has no superior, if indeed he has an equal, in the world.

Of recent years Mr. Dowling and his City Investing Company have not been as active as they were. But rival operators are far from forgetting his existence. Like some of his contemporaries, Mr. Dowling is never so active as when he has retired.

U. & U.

Charles F. Noyes

THE life of Mr. Charles F. Noyes is worth exactly $2,400,000. If any one had told him so when he was running the candy concession on the Block Island boat in 1892 he would probably have gone into the Sound without a whimper. But the United Cigar Stores, which pay the premium, must know. They ought to. They paid just that for a part interest in his real estate business and insured him to protect themselves.

Mr. Noyes' office day contrasts curiously with that of Mr. Robert Dowling. Four and a half hours before Mr. Dowling appears at his office, Mr. Noyes is at his desk. He works sixteen hours a day. He will dictate for four hours straight to four stenographers, one an hour, and talk on the telephone for five. He attributes his health (and the insurance policy) to his habits of sleep. When he goes abroad in the summer as he usually does, he sails on a slow steamer and sleeps twelve or fourteen hours a day until he is slept up. Sometimes it takes six weeks. Sometimes it takes six days. When he finds himself waking at 6:30 A. M. he comes home. He takes passage on the fastest steamer he can find.

Kaiden–Keystone

Fred F. French

THE French story and the Chanin story are alike in profile, Mr. Chanin's being the more spectacular and Mr. French's the more arduous. Mr. French did not establish himself in the sun until the advanced age of forty. Prior to that he had been a cigar salesman's son in the Bronx, a scholarship boy in the Horace Mann School, and at Princeton (for less than a year), a railroad employee, a ranch hand in New Mexico, a fireman in a quicksilver mine, an engineering student at Columbia, a timekeeper on a building job, a foreman on a reservoir contract; he had been penniless frequently and a failure as a builder at least twice, one of his failures saddling him with assumed obligations it took him years to pay off; and he had been hungry and unhappy as well as poor. But in his case as in the case of Mr. Chanin, it was the discovery of the means of credit which finally established him. His "French Plan" was promulgated in the years following 1920, and from that time on his buildings have steadily risen. Tudor City, the group of residential skyscrapers at the east end of Forty-second Street, is his great achievement to date.

Mr. French has, since he achieved it, made a profession of his success. He writes for *The Voice*, house organ of the French companies, accounts of his early struggle, and he addresses the French Company salesmen every business morning in the auditorium of the French Building on the technique of getting on. Mr. French has faith in mankind. He believes any man can learn to be a salesman, though Jesus Christ must remain "the best salesman of all time." Mr. French explains the words, "Knock and it shall be opened unto you." "What He meant was, 'Keep knocking until the door is opened and if it isn't opened pretty soon, kick down the door.'" Mr. French says he agrees with Jesus. "That's my philosophy, too."

Beyond his buildings, his business, and his Bruce Bartonesque beliefs, Mr. French's topography is rather flat. He dislikes the theatre because it is a waste of time and refuses to own an automobile. He neither drinks nor plays cards. He smokes cigars "to have one sociable habit." And work is the greatest joy he knows.

In his office in the French Building Mr. French has hung on one wall a photograph of President Roosevelt as a big-game hunter. On the opposite wall, in similar pose, also hunting, is Mr. French.

Harris, Forbes & Co.

Which, in 1929, led all U. S. underwriting houses in dollar volume of syndicates headed; which is the acknowledged sire of the bond salesman; which is the *only* U. S. house to have a lion-tamer for a vice president.

IN OTHER countries the investor, as a rule, goes to his bank and is permitted to buy bonds, but in America he is run to earth by a salesman and more or less coerced into absorbing securities. This difference in method, which is largely responsible for the rapid development of investment banking here, is almost exclusively the product of one organization. The modern technique of distributing stocks and bonds as well as many underwriting policies derives principally from N. W. Harris & Company and its successor, Harris, Forbes & Co.

Norman Wait Harris, who founded the house to deal in municipals in 1882, was the first investment banker to send out salesmen. His contemporaries, operating on British conservative lines, scornfully called the new practice "ringing door bells." The keynote of the one banking method was dignity, of the other aggressiveness. In order to conceive the enormous consequences of his enterprise, it is necessary only to realize that Norman Wait Harris thus became the sire of all bond salesmen such as are employed now by nine out of every ten banks, trust companies, and investment houses. Indeed, until recent years it was generously said that 75 per cent of the men in the bond business were Harris trained. Less frankly acknowledged, but flattered by extensive imitation, are the many Harris, Forbes innovations in "setting up," advertising, and marketing security offerings.

Yet when Harris opened his first office in Chicago the public knew little, and not all that favorable, about bonds. The rewards of his first year's work were just two new clients. At that time, circa 1882, banks and insurance companies were the only consistent customers of bond houses, which were few in number but powerful in influence. Thus forced to create his own market, Harris began to employ newspaper advertising, supplemented by circulars and letters to investors. Gradually he trained and sent out a staff of half a dozen young security analysts who traveled around the country telling people of wealth about bonds, the principles underlying them, and the care with which they were purchased by the Harris organization. These men made no attempt to sell directly at first, so in 1887, when Harris had been in business five years, his volume of sales was only $3,000,000. In the next decade, however, the Harris "missionaries" began to bring in converts, and they were so successful that by 1895 sales mounted to $20,000,000.

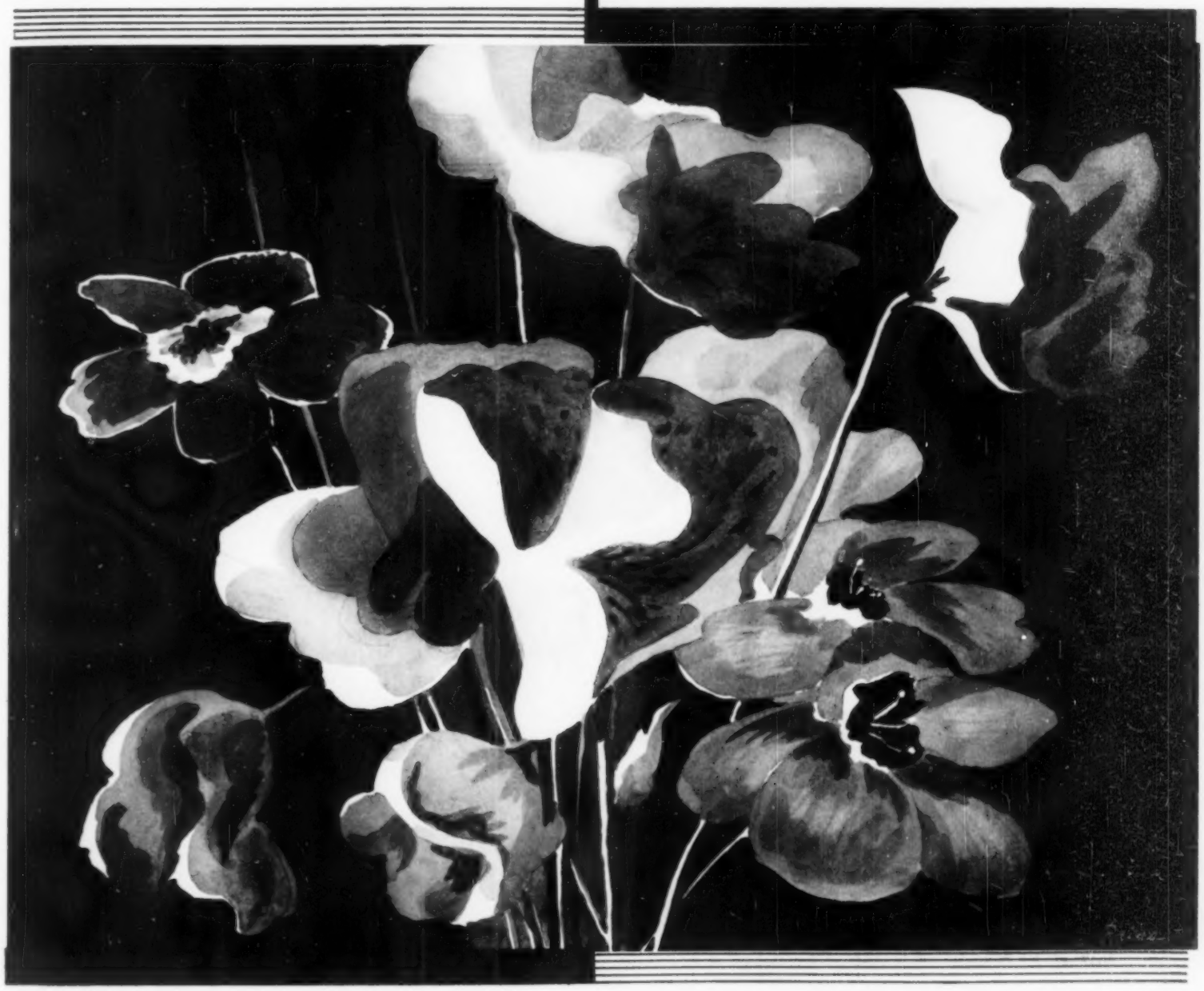
In 1891 Harris persuaded Allen B. Forbes to quit the legal department of Swift & Company to become an investment banker. Forbes moved to New York in 1900, within a year became senior resident partner of the firm to which he added his name in 1911. But the modern period of Harris, Forbes' development dated from the day Forbes came to Wall Street. He found that his firm already had invaded upstate New York and New England in competition with some of the oldest and richest eastern bond houses. In 1886 Harris (who was born in Becket, Massachusetts, in 1846) had established a Boston office which, despite the fact that its first three salesmen resigned in discouragement and disgust, was now turning in a large annual volume of sales.

Indeed, upstate New York had become the training field for young Harris, Forbes "missionaries," by now recognized, of course, as bond salesmen. Early in 1902 Harris happened to be in Syracuse exercising his peculiar talent for issuing more orders than ever could be carried out by a given number of men. There he encountered a new salesman, Charles E. Gardner. Now Harris hated complacency, so when he asked Gardner if everything were "all right," he exulted in Gardner's emphatic opinion that there was much to be desired. "Too many cub salesmen are being sent after rich accounts with an insufficient knowledge of securities and salesmanship," Gardner said. "What the New York office needs is a real school for bond salesmen." "Report there at once and set up such a school," Harris told Gardner. The latter moved down from Troy and Harris, Forbes saw its first school for bond men, crude at first but later a tremendously effective machine for building sales.

A distinct pioneer in direct solicitation of investment accounts in the eighties, Harris became only a part of a movement when, three decades later, every major bond house in Wall Street began to train its own salesmen. One or two other institutions established more elaborate machinery for processing graduate raw material, and colleges and universities began to awake to the necessity for courses in business administration. The influence of the movement Harris inaugurated, however, affected a whole generation of students so profoundly that, for several years after the War, it appeared inevitable that college graduates must begin their march to fame by selling bonds.

THIS CHART SHOWS THE WIDE DISTRIBUTION ACCORDED ASSOCIATED GAS & ELECTRIC SECURITIES. HARRIS, FORBES HAS BEEN A MAJOR FACTOR IN THE NATIONWIDE OWNERSHIP OF A COMPANY WITH ASSETS OF $319,828,169

BOUQUET



"It was a lucky day for us when we put our advertising in the hands of Young & Rubicam. Not only do they know how to sell merchandise through advertising, but they place the welfare of our business above any purely selfish considerations of their own." SAMUEL MESSER, PRESIDENT, QUAKER STATE OIL REFINING CO.

The present Harris organization centers around Harris, Forbes' New York headquarters at Pine and William streets. So powerful was the founder's phobia against speculation that he would never have a Wall Street address, which he identified with stock gambling, and this is a tradition that probably will be honored for years to come. The firm nowadays participates in almost one billion dollars of new financing annually as originator, distributor, or both. Thus it differs from such banking houses as Morgan or Kuhn, Loeb, which, preëminent in originations, maintain no retail outlets.

In 1916 the old partnership of N. W. Harris & Company was dissolved, and the eastern elements of the business were sold to Mr. Forbes and his associates in the New York and Boston offices. The Chicago branch was incorporated into the Harris Trust & Savings Bank, an institution whose stock is publicly held in small part. The old reciprocal arrangements between the New York, Boston, and Chicago offices, however, have been preserved.

Although primarily a selling organization, Harris, Forbes is not thus limited in its sphere of influence. The firm is one of the handful of sovereign powers that rule Wall Street's banking world. Founded and operated for several years as a municipal bond house, it gradually developed public utility banking, which is now its chief activity. In the past decade the firm has assumed an increasingly important position in industrial and investment trust financing. Before almost all of its contemporaries, Harris, Forbes realized the diverse and useful functions of the investment trust and, in 1927, became bankers for the American Founders group. The house also has taken an active part in foreign financing, particularly in the post-War flotation of German state, municipal, and utility issues.

Harris, Forbes' business yearly grows greater. Its activities since 1925, in 1929 alone, and in the first quarter of 1930 may be gauged by the appended table. This excludes domestic and Canadian municipals, reckons preferred stocks at par and common stocks at their offering prices:

	As syndicate head	*As syndicate participant*	*Total business*
Jan. 1, 1925 to Jan. 1, 1930	$1,574,482,500	$2,749,500,500	$4,323,983,000
1929— Full year	*370,658,000	470,566,000	841,224,000
1930— First quarter	123,000,000	418,900,000	541,900,000

* *Led all American underwriting houses in dollar volume of syndicates headed in 1929*

Harris, Forbes' good will extends to many out-of-the-way regions because of the firm's long usefulness as a municipal bond house. In addition to financing for hundreds of smaller communities, the firm has floated the issues of every city of more than 100,000 population in the United States. In fifty-five of these cities it has, as well, assisted in financing one or more of the public service corporations. Many bond houses have had a hand in this development but, in most instances, the records show that the Harris organization was the pioneer banker.

The firm has many constructive achievements to its credit. It killed the practice known as "bidding off" municipal issues. Under this system the winning bid was prearranged by the buyers, but the actual sale was made within the buyers' syndicate to the member offering the highest price. The average, of which the municipality was defrauded, was then divided between the syndicate participants, amounting in extreme cases to five or ten points. Harris, Forbes sponsored the now general practice of retiring municipal term issues by serial maturity and fought for adequate sinking fund provisions in all flotations. The firm always contended that the life of a bond issue should never be longer than that of the improvement for which it was sold and that arrangements should be made beforehand for repayment of a municipal loan without resort to refunding.

So extensive is the Harris, Forbes sales empire that the firm is much sought as a participant in syndicates. And, being helpful to so many bankers, the house has many friends, few, if any, known enemies. It is not, like many banking institutions here and abroad, hierarchial. In its forty-eight-year history no family lines of succession have been laid. It is rather a republic of finance in which any male, white employee ultimately may become president.

* * *

Thus was fulfilled the aspiration of Lloyd Waddell Smith, now president of Harris, Forbes and chairman of its board. Certified an attorney by Harvard and New York State (after Andover and Yale), he entered the Harris organization's Chicago office in 1899. Before the end of the year he was transferred to the New York office, where he became a member of the firm in 1909. Mr. Smith assumed the presidency in 1921, succeeding Mr. Forbes, who became chairman of the board.

Mr. Smith coördinates all of Harris, Forbes' activities, the work of its members, its numerous branches, salesmen, buyers, and statisticians. Tall, silver-haired, and earnest, he presides daily over the fifteen-minute morning conference of the firm's members, delegates authority, distributes rewards. He is known as a fair-minded, able financier in any field, and as a man who has made uncommonly few mistakes in his career.

Mr. Smith's recreations are horticulture and history. They find expression in his model farm in Madison, New Jersey, and in his collection of Americana. The latter is notable for its valuable letters, including those of General Washington and John Quincy Adams. He is a member of both the New Jersey and New York Historical Society. He dislikes personal publicity but is an authority on advertising, which he supervised for his firm for many years before becoming its head.

Harris, Forbes is the only investment house in the world whose senior vice president is a lion-tamer. This incongruity is chargeable to Mr. Charles W. Beall (pronounced Bell) who, being a bachelor, has adopted three lions, two tigers, half a dozen leopards, a jaguar or two, and many monkeys and snakes. He is the real owner of that conscientious troupe of entertainers known as Weir's (Mr. Beall's middle name is Weir) Performing Elephants, favorites at the Hippodrome and Luna Park, New York. The remainder of his menagerie is lodged at Rockville Center, Long Island, where the public pays ten cents, school children nothing, to see it. One day in almost every week the zoo is closed and its owner, dressed in heavy canvas garments, mingles with his pets. Mr. Beall's hands bear many small scars from these training encounters. Once he rented an empty brewery to house his menagerie; again, with Harris, Forbes talent, staged a circus in the grand ballroom of the Pennsylvania Hotel. In his office or out he chews on thick, black cigars, talks in a sonorous drawl like the showmen who are among his most intimate friends.

Mr. Beall, who entered Harris, Forbes as a clerk, is the author of many clauses now found in public utility mortgage indentures. He is regarded as without superior as a buyer of utility securities, particularly those of electric companies.

One of the most active members of the firm is Frederick S. Burroughs, who is a director of many investment trust and utility companies. The Chicago branch of the organization is headed by Albert W. Harris, son of the founder who also is chairman of the Harris Trust & Savings Bank's board. In Boston, John R. Macomber, sportsman, civic and industrial leader, holds sway.

One of Mr. Smith's first duties with Harris, Forbes was to sift out applicants for positions. He took this, as he has all his work, seriously and developed a system for selecting promising young men. Preferring college graduates, Mr. Smith always sought to employ those who had "done something" on campus or in classroom. One day Yale sent him a young man who admitted that he had excelled neither in scholarship nor athletics. What, then, did the young man go in for?

"I was careful," the applicant replied, "to get passing grades in every subject, but all of my spare time I spent in getting acquainted with all the students. I know personally more of the students who were there during my four years than any other man in Yale."

He, E. Carleton Granbery, got the job, became a specialist in rail financing and trust banking, and is now a vice president in charge of foreign business.

No such educational advantage had Vice President Harry M. Addinsell when he joined the firm. Entering the buying department, he dug deep into utilities while studying electricity and kindred sciences in night school. His thoroughness won for him membership in his firm, which he represents at the present time on the board of the New York Trust Company.

Is Vacation Safe?

Read your answer, in the "stars"!

"HEAVENS!", you exclaim, as you count the *stars* that mark the danger spots in everyone's vacation! "Why, there's just as much need for a Sports Liability Policy as there is for an Accident Policy!"

An Ætna *Accident* Policy covers you like the atmosphere covers the earth! For wherever you are, if an accident happens, it gives you a chance to breathe freely, financially, should hospital and doctor bills be thrust upon you. Protects your income, too—and of course, provides for the family should the accident prove fatal.

An Ætna *Sports Liability* Policy on the other hand, protects you from financial loss should you injure others while golfing, boating, hunting, fishing—or any other sport! It covers you against all loss (up to the limits of the policy) and all expense (without limit) arising or resulting from personal injury claims regardless of whether liability exists or not!

ÆTNA writes practically every form of Insurance and Fidelity and Surety Bonds. Ætna Protection reaches from coast to coast through 20,000 agents. The Ætna-izer in your community is a man worth knowing.

ÆTNA

ÆTNA-IZE

SEE THE ÆTNA-IZER IN YOUR COMMUNITY – HE IS A MAN WORTH KNOWING

Clients of Harris, Forbes

American Founders Corp.

And the youthful Mr. Seagrave

BACK to back with Harris, Forbes on Pine Street stands the American Founders Corp., senior, largest, and perhaps most successful of the nation's investment units. Its statistical resources are unmatched, its economics department—presided over by Dr. Rufus S. Tucker—as far-seeing as academic eye can reach. Dominant interests in the Founders regimentation of capital and intelligence are Louis H. Seagrave, thirty-eight-year-old Iowan, and Harris, Forbes. The extent of the bankers' interest in the Founders group has never been revealed, but is indicated by the fact that of the seven United and fourteen American Founders directors, two of each are Harris, Forbes representatives.

Control of these general management companies recently was transferred from American to United Founders, giving the latter consolidated net assets of considerably more than $300,000,000. A critical analysis of this nest of investment units by Mr. John T. Flynn, published in April by the *New Republic*, estimated that adequate working control of these huge resources has been obtained by the sponsors with an investment of probably less than $40,000,000 through smart allocation of voting power. Impeachable or not in its methods and capital set-up, the Founders group has been remarkably successful. For the past eight years, including 1929, American Founders has averaged a net return of more than 10 per cent on its funds. United Founders, organized in February, 1929, managed to earn $15,583,190 before November 30, last, while on January 1, 1930, its investments taken at current market quotations were above actual cost.

Ramifications of the Harris, Forbes-Founders trust holdings are shown by the appended list of controlled or affiliated companies, with certain of the principal interests of such companies:

*PUBLIC UTILITY HOLDING CORP. OF AMERICA

Associated Gas & Electric Co.
Central Public Service Corp.
South American Railways Co.
Indiana Consumers Gas & By-Products Co.
L'Union Electricque Rurale
Westphalia United Electric Power Corp.

*UNITED STATES AND OVERSEAS CORP.

United Founders Corp.
- U. S. Electric Power Corp.
- Standard Gas & Electric Co.
- United National Corp., Seattle
- Insuranshares Corp. of Delaware

American Founders Corp.
- International Securities Corp. of America
- Second International Securities Corp.
- United States and British International Co., Ltd.
- American and General Securities Corp.

American and Continental
North and South American Corp.
International and General Corp.
Trans-Oceanic Trust, Ltd.

*Officered by members of Harris, Forbes & Co.

AMONG THE HARRIS, FORBES CLIENTS

Public Utilities

Alabama Power Co.
Arkansas Power & Light Co.
Associated Gas & Electric Co.
Birmingham Electric Co.
Buenos Aires Central Railway and Terminal Co. (Argentina)
Cities Service Co.
Central Public Service Corp.
Electric Power Corp. (Germany)
Illinois Power & Light Corp.
Kansas Power & Light Co.
Lincoln Telephone & Telegraph Co.
Los Angeles Gas & Electric Co.
Louisville Gas & Electric Co.
Minnesota Power & Light Co.
Nebraska Power Co.
New England Gas & Electric Association
New England Power Association
Nippon Electric Co., Ltd. (Japan)
Pacific Northwest Public Service Corp.
Portland Gas & Coke Co.
Silesia Electric Corp. (Germany)
South Carolina Power Co.
Southern California Edison Co.
Southern Cities Public Service Co.
Stettin Public Utilities Co. (Germany)
Terni Industrial Electric (Italy)
Texas Power & Light Co.
Toledo Edison Co.
Wisconsin Gas & Electric Co.
Wisconsin-Michigan Power Co.

Industrials

American Colortype Co.
American Rolling Mills Co.
Brown Co.
Detroit & Canada Tunnel Co.
Fairbanks, Morse & Co.
Gesfuerel Co. (Germany)
Libby, McNeill & Libby
Phillips Petroleum Co.
Price Bros. & Co., Ltd.
United Industrial Corp. of Germany (VIAG)

Foreign, State, and Municipal

Free State of Prussia
German Consolidated Municipal Loan
City of Munich
Duisburg, Germany
Province of Cordoba, Argentina

Mr. Seagrave is a forceful board chairman. He weighs over 200 pounds and is built to scale. When he comes to a narrow door, he edges through sidewise. He was an All-Western guard on the Washington football teams of 1915 and 1916, and he still sees something of his old coach Gil Dobie, now at Cornell. He goes in for boating, riding, and squash tennis, all with characteristic vigor. His squash strategy is to plant himself solidly in the center of the court and let his opponent and the ball bounce around him. He enjoys commuting into New York from Mamaroneck in his sixty-foot boat, the *Tyee* (Chinook for "Chief"), at twenty-five miles an hour. Other things he likes are contract bridge and singing in impromptu quartets. What he likes best, however, is building more stately financial mansions for his utility companies. His last vacation was a pleasure-business trip to Europe in the spring of 1928.

Harris, Forbes and Utilities

Three major systems, discussed in superlatives

FOREMOST among Harris, Forbes clients is the rapidly expanding Associated Gas & Electric System, with its $1,000,000,000 assets, 1,370,000 customers, 190,000 stockholders, and annual gross of $105,000,000. J. I. Mange is president and chairman of A. G. & E., but Howard C. Hopson is its "front man," its vice president and treasurer. The corporate body of A. G. & E. wields two arms: its operating properties are supervised by the J. G. White Management Corp., while, to quote from a Harris, Forbes pamphlet, "the financial management of the system is under the direction of H. C. Hopson (*idem*) & Company, who are specialists in the field of finance, taxes, and public utility accounting."

Therefore, it is apparent Harris, Forbes assumes no ethical liability for some of the A. G. & E. policies, which in recent months have brought Mr. Hopson and his company into disfavor in certain quarters, notably upstate New York. Nevertheless, two Harris, Forbes representatives—C. W. Beall and F. S. Burroughs—are seated on the ten-man board of A. G. & E. directors.

Of almost equal consequence in the Harris, Forbes ledgers is Henry Latham Doherty's vast Cities Service Company. This billion dollar collection of public utility and oil enterprises lists 750,000 stockholders, more than any other corporation in the world. Ten years ago holders of Cities Service common alone numbered less than 5,000; today they total 359,000. Cities Service gross earnings for a year are near $200,000,000. Oil flows from 5,494 producing Cities Service wells scattered over 3,160,850 acres of leased oil and gas lands. Last year the Doherty companies delivered to consumers 1,587,517,000 kilowatt hours of electric current, 122,466,300,000 cubic feet of gas.

The weight of the combined Harris, Forbes-American Founders influence was manifest early this year when these interests assumed, through their United States Electric Power Corp., a dominant position in Standard Gas & Electric Company. Although this company, with its assets of one billion dollars, constitutes the second largest group of public utility properties in the country, its control had been injudiciously invested in one issue of only $1,000,000 of 6 per cent *voting* preferred stock, solely owned by H. M. Byllesby & Company. This issue has been cancelled, and control of the enterprises is now shared by the new interests with the Byllesby concern which, under terms of the truce, was retained as manager of the Standard Gas & Electric properties.

IN THE BATTLE OF THE BRANDS
only modern plants can survive

Never-ending is the pressure of progress; relentless the tides of changing demand, altered conditions, and competitive improvements. Constantly they batter the strongholds of production and distribution, seeking out weak spots in plant equipment, obsolete buildings, inadequate methods.

Volume must hold its ground and make new gains . . . wages must uphold the morale of labor . . . yet production costs must shrink to meet the trends of rival prices. Otherwise profit joins the casualty list.

Industry today answers the challenge with straight-line production . . . not in one industry alone, but everywhere. Shrewd foresight goes into plant design so that one operation follows another with exacting precision. A predetermined schedule meets speed requirements and cuts costs by eliminating lost motion.

From widely varied industries comes the experience that Austin Engineers bring to your problems of plant design. Whether you plan to modernize your present facilities . . . to build a complete new plant, branch units, or warehouses . . . Austin Engineers are equipped to serve you anywhere in America—or anywhere in the world.

Preliminary consultation with Austin Engineers . . . without obligation—will bring you vital information. Approximate costs on any contemplated project gladly furnished. Phone, wire, or write the nearest Austin office.

THE AUSTIN COMPANY

The AUSTIN METHOD *of Undivided Responsibility*
Design, construction and building equipment . . . separate responsibilities ordinarily . . . become one unified responsibility under The Austin Method. One nation-wide organization handles the complete project under one contract which specifically guarantees in advance, total cost, time of completion with bonus and penalty clause if desired; and high quality of materials and workmanship.

THE AUSTIN METHOD

ENGINEERS AND BUILDERS . . . . CLEVELAND

If vacation brings you to **NEW ENGLAND** *we invite you to pay us a call. It will permit us to handle with despatch whatever banking requirements you may have away from home. And more important, it will enable you to establish personal contact with the executives of New England's foremost financial institution.*

The **FIRST NATIONAL BANK** *of* **BOSTON**

Hearst Stock in Public Offering

THE general and in particular the financial condition of the newspaper satrapy of William Randolph Hearst became, on July 7, a public affair. But not very public. Inviting the public to buy $50,000,000 of stock, Mr. Hearst told some things of interest.

It was the biggest, one of the most curious, and by all odds the most dramatic piece of stock financing Wall Street has seen this year. Literally, Wall Street did not see much of it. For huge though it was, no investment banker was reported as having any share in it. It was offered for sale direct to the public through the offices of Hearst newspapers and inconspicuously through several big banks or their securities.

Briefly, and not to be technical, the deal was as follows: Mr. Hearst took ten big newspapers and the *American Weekly* (which is the colored Sunday supplement that goes with all Hearst papers) and put them into a corporation called Hearst Consolidated Publications, Inc. He told the public that these eleven publications made an average of about $11,000,000 from 1926-29. In 1929 their net profit was $12,854,626.69 out of gross receipts of about $83,000,000. This was after allowing bond interest of some $2,300,000 (assuming an average interest rate of 6 per cent). So that profits for 1929 before bond interest would be about $15,000,000 He did not specify what each paper made, but one newspaper publisher made the following guess for 1929:

San Francisco *Examiner*	$2,000,000
S. F. *Call-Bulletin*	500,000
Los Angeles *Examiner*	2,250,000
Los Angeles *Herald*	1,500,000
Oakland *Post-Enquirer*	250,000
N. Y. *Evening Journal*	1,500,000
Chicago *American*	1,500,000
Detroit *Times*	1,000,000
Pittsburgh *Sun-Telegraph*	1,000,000
Seattle *Post-Intelligencer*	500,000
American Weekly	2,500,000
	$14,500,000

Which as a guess may be as good as any since it adds up pretty closely to the slated fact.

On the basis of average earnings, the total value of these properties might be put at $125,000,000, a grand round sum. (If times were bullish you might put it higher, but probably not now, especially as most of these papers have reached a high state of development.) Against this value there are some $38,500,000 of bonds outstanding. And on top of this Hearst Consolidated now offers $50,000,000 of 7 per cent Class A stock, which is a sort of preferred stock. This means that bonds and preferred account for nearly $90,000,000 of an estimated $125,000,000 value. To say the least, this indicates the greatest confidence in the stability of newspaper properties.

However, the 7 per cent Class A is made more attractive by reason of its right to participate with the common to the extent of an additional 3 per cent. That is, if you buy $1,000 worth of stock, you can get as much as $100 in dividends if the papers make sufficient earnings. But you cannot vote except in the sad event that four quarterly dividends are passed. And, on the other hand, your stock can be called in for $1,200.

So, in short, Mr. Hearst is not making you a full partner. He is merely saying in effect that he has built up magnificently huge and stable properties in which you may now invest with hope of a high yield but without hope of multiplying your capital. All the ordinary common stock is apparently retained by Mr. Hearst and his employees.

Why did he do this? Usually the purpose of a stock issue is expounded at least in generalities, but Mr. Hearst gave no reasons. Two of his financial writers (Messrs. Forbes and Rukeyser) praised the sociological merits of letting the public associate itself with the ownership of newspapers.

Ever since the late Senator George Hearst of California gave his stripling son "Willie" the sickly San Francisco *Examiner* as a plaything William Randolph Hearst has been accustomed to owning the show. In the eighties and nineties he owned the *Examiner* and made a newspaper out of it. Other men spread the grease and wrote the copy, but Mr. Hearst owned both the presses and the pulp and wrote the spirit of the paper, and there was no mistake about it. Last year he still owned the *Examiner* and 23 newspapers and 14 magazines. And there was no mistake about *that*. When his private car glided into a town where there was a Hearst newspaper, Mr. Hearst had no hesitation in sending a messenger to the newspaper office with instructions to bring back thousands of dollars in cash and charge it to his personal account.

But money has never greatly concerned Mr. Hearst. Heir to a huge fortune which he rapidly multiplied and having a yearly income of millions—here was a rich man's son with a purpose. And rare is the journalist who will not say that Mr. Hearst is one of the greatest of all time. Certainly he has a record for quantitative success unmatched by anyone save Northcliffe. With Hearst as with Northcliffe (who put "N"s on his furniture), the career has been intensely and—the word must be used—dynamically personal. As his California province (still his most profitable) grew into a nation-spanning satrapy (the money-losing New York *American* is supposed to be his pet), he acquired, of course, able collaboration and delegated all detailed responsibility. But always he remained the autocrat. His whim was law. Thus it can scarcely be supposed that Mr. Hearst rejoices in the issues of bonds and preferred stocks. For the autocrat thus becomes, however slightly, a limited monarch. He has a financial accountability to the public such as he never had before. Necessity evidently intervened. The greatest necessity is, no doubt, provision for the future when he may have to be less active. He is sixty-seven. He has intelligent sons, but sons cannot be counted on to conduct a business at once so vast and so personal. Generally speaking, it is better to finance too soon than too late.

But also it is possible that Mr. Hearst desired to strengthen his immediate financial position. Not all his properties make money. He has some heavy losers. None of the losers were put into this deal. In New York and Chicago his evening papers make, but his morning papers lose. It is also probable that he loses in Boston, Albany, Rochester, Atlanta, Omaha, Washington (two papers), and Baltimore. On the other hand, his *Good Housekeeping* is one of the most profitable magazines in the world, and he has additional revenue from *Cosmopolitan*, *Harper's Bazaar*, etc., so that his net profit from publishing may easily run to $5,000,000 a year. Out of this, however, he has paid large sums for papers bought in recent years. So it is possible that, relative to the vast size of his enterprise, he required a larger supply of cash.

While it seems out of character for Mr. Hearst to be doing all this financing, the very size of it is a tribute to genius. When "W. R." left Harvard in 1885 all the newspapers in the land were not worth $90,000,000 which the public is now willing to invest in Hearst papers in bonds and preferred stocks.

Industry Retains High Wage Scale

ONE of the comparatively few encouraging aspects of the present business depression has been the absence of any concerted movement toward a downward revision of wages. There has been, unquestionably, a notable increase in unemployment, and there have also been wage reductions, as is shown by the fact that Federal Reserve statistics on factory pay rolls have declined considerably more than the same statistics on unemployment. Yet no one has arisen to announce a general wage-cutting program as a regrettable but a necessary retrenching measure. The theory of high wages has remained unchallenged. To the man without work, this theory may be more tantalizing than satisfying. To the man whose wages have come down, the absence of any economic doctrine explaining the inevitability of a reduction may appear irrelevant. Yet the fact that industry has so far remained in a period of marked depression, committed to maintaining, as far as possible, boom time wages is a safeguard against a more acute crisis and a possible indication of better times to come.

Economic theories seem often to function more as an explanation of an existing condition than as an analysis of a general condition. It was not until the late great bull market was drawing toward the close of its spectacular career that its exponents became sufficiently courageous to preach the doctrine of a pyramided prosperity. Almost exactly a year ago, however, that doctrine was given an official, almost a sanctified, expression in the report of President Hoover's economic council. The gist of this report was that the consumer's ability to consume was bounded by no limit; that the greater the country's production the greater the country's wealth and the higher its standard of living. Furthermore, the Hoover economists added, American industry had registered a notable triumph in keeping wages up during the post-War depression and in seeking its profits not through paying out less in wages but through taking in more in sales. The country was therefore encouraged to look forward to a period of continued prosperity based on an unlimited consumption capacity. General was the feeling that there had arrived a new economic era

superior to the old sequence of inflation and depression.

Today, of course, a great portion of that new era theory has vanished, and from the extreme optimism of 1929 there has been, in many quarters, a rebound to an equally extreme pessimism of 1930. The American people are not so eager to purchase equities in American wealth, an hypothesis of unlimited consumption has collided with a reality of surplus supplies, and the traditional trade-cycle concept has substantially returned. Yet—and this is the vital point in the situation—even at a time when so much of the old structure of prosperity has been swept away, American industry is still clinging (though in some instances with rather a slippery clutch) to its high wage program. If economists today were generally conceding the impossibility of maintaining salary levels, if the leaders of industry were preparing a national program of salvaging dividends by contracting pay rolls; if labor were looking forward not to a possible, or even a likely, but an inevitable reduction of its earning power, it might then be said that our entire post-War development has been a snare and an illusion. Apparently, however, we have at least salvaged the high wage theory from the wreckage of Coolidge Prosperity: here perhaps was a sound foundation of a structure that rose rather too high and rather too rapidly.

Depression, meanwhile, stays with us, the more threatening because it is a world depression and because, as Owen D. Young and many another observer has pointed out, it is difficult for one of the world's nations to remain lastingly more prosperous than its brothers. As long, however, as Big Business remains as bullish as figures on steel production and freight car loadings permit and as long as Little Business does not get apprehensive and inaugurate a wage cutting program of its own, we should be able to mark time and to avoid calamity until we reach a period in which the undigested production of the recent inflation has been absorbed into the body economic.

Kilowatt Hours the World Over

ELECTRIC light and power men from all over the world gathered in Berlin last month, listened to some 500 papers on 500 aspects of the utility business. Indeed, the two papers most widely publicized were, from a strictly utility standpoint, almost irrelevant. Dr. Albert Einstein, exponent of relativity, explained to utilitarians how time and space must be united in a four dimensional *continuum* and how space is the only reality. Dr. A. S. Eddington, professor of astronomy at Cambridge, announced that there was sufficient energy in a drop of water to supply 200 horsepower for one year and that a portion of this energy could, perhaps, be released if it were possible to heat matter to a temperature of 40,000,000 degrees Centigrade.

The most significant of the papers dealing directly with utilities was presented by Dr. Oskar Oliven, German electrical engineer, who advocated a European super-power system linking the entire European continent in a system of five major transmission lines. One line would run from Sargossa, Spain, to Lyons, then east to Vienna, southeast through Rumania, and northeast to Rostof, Russia, at the mouth of the Don River. A second west-to-east line would go from Paris to Warsaw. Meanwhile there would be north-and-south lines from Calais to Lyons, from southern Norway through Sweden to Rome and from Warsaw through Vienna and south into Yugoslavia. The system would require 6,000 miles of high tension wires and would cost some $500,000,000. Although the Oliven project appeared feasible enough from an engineering standpoint, corporate and governmental complications make it chiefly of academic interest.

Other papers of general interest were supplied by Dr. H. Foster Bain, who estimated that minerals and mineral products (including coal and petroleum) comprised 70 per cent of the freight carried on North American railroads; by Dr. Robert Sibley, who told of Californian electric development with its record-breaking 250- and 300-mile 220,000 volt lines; and by Frederic M. Sackett, U. S. Ambassador to Germany, who annoyed utility men by complaining that the price of electric power was fifteen times its production cost.

• • •

While utility men were talking and thinking internationally in their Berlin meeting, Pynchon & Co., Manhattan financing company specializing in utility issues, was publishing international statistics of utility production and investment. Many of the Pynchon & Co. figures, prepared by Mr. C. M. Withington, are avowedly estimates. Even as such, however, they furnish a valuable comparative picture of utility development.

The electrical production unit is generally the kilowatt hour, which equals one and one-third horsepower or, in more familiar terms, is an amount of electric power sufficient to keep a forty watt lamp (which is a medium-sized household lamp) burning for twenty-five hours or to operate an average-sized electric iron for about an hour and a half. With an annual world production of some 300 billion kilowatt hours, the United States, with 125 billion, produces about four times as much electric power as Germany, its nearest competitor. The ten leading countries in kilowatt hour production are:

Kilowatt hours (in billions)	
United States	125
Germany	34
Canada	18
Great Britain	16.2
France	15.5
Japan	11.5
Italy	9.8
Norway	8.5
Russia	6.5
Switzerland	5.5

Canada, with its small population and great hydroelectric development, generates some 1,845 kilowatt hours per capita, as against 813 in this country, 450 in Germany, and 330 in Great Britain. Winnipeg has the world's greatest consumption per residence, Winnipeg families averaging 3,741 kilowatt hours and in many cases using electricity to heat homes and to heat water. The United States is the most thoroughly electrified country, U. S. industry being 75 per cent on an electric basis compared to 70 per cent for German, and 50 per cent for British industry. Switzerland, with its small area and ample power sources, is far in the lead in railway electrification, about 60 per cent of Swiss mileage being electrified, compared to 8 per cent in Austria, and 6 per cent in Italy.

Estimates of the money invested in utility plants are distinctly less accurate than estimates of electric production, although here again the United States is of course far in the lead. Leading countries according to Mr. Withington's Plant Investment table are:

Electric Plant Investment (millions of dollars)	
United States	11,045
Germany	2,700
Great Britain	1,500
Canada	1,000
Italy	945
Japan	600
Switzerland	312
Denmark	150
Mexico	130
China	110

The world investment in principal countries is some $18,805,000,000.

In addition to its domestic investment of $11,045,000,000, the United States has invested abroad, in utility financing, some $800,000,000 to $1,000,000,000. The most ambitious utility project in Europe is the Five-Year Program of the Soviet Union. This program (which will extend into 1933) calls for a plant investment of $2,302,000,000.

Rails into Ships & Higher Rates

THOUGH most of the month's railroad activities centered around the energetic Brothers Van Sweringen (see opposite page), by no means to be overlooked are such items as:

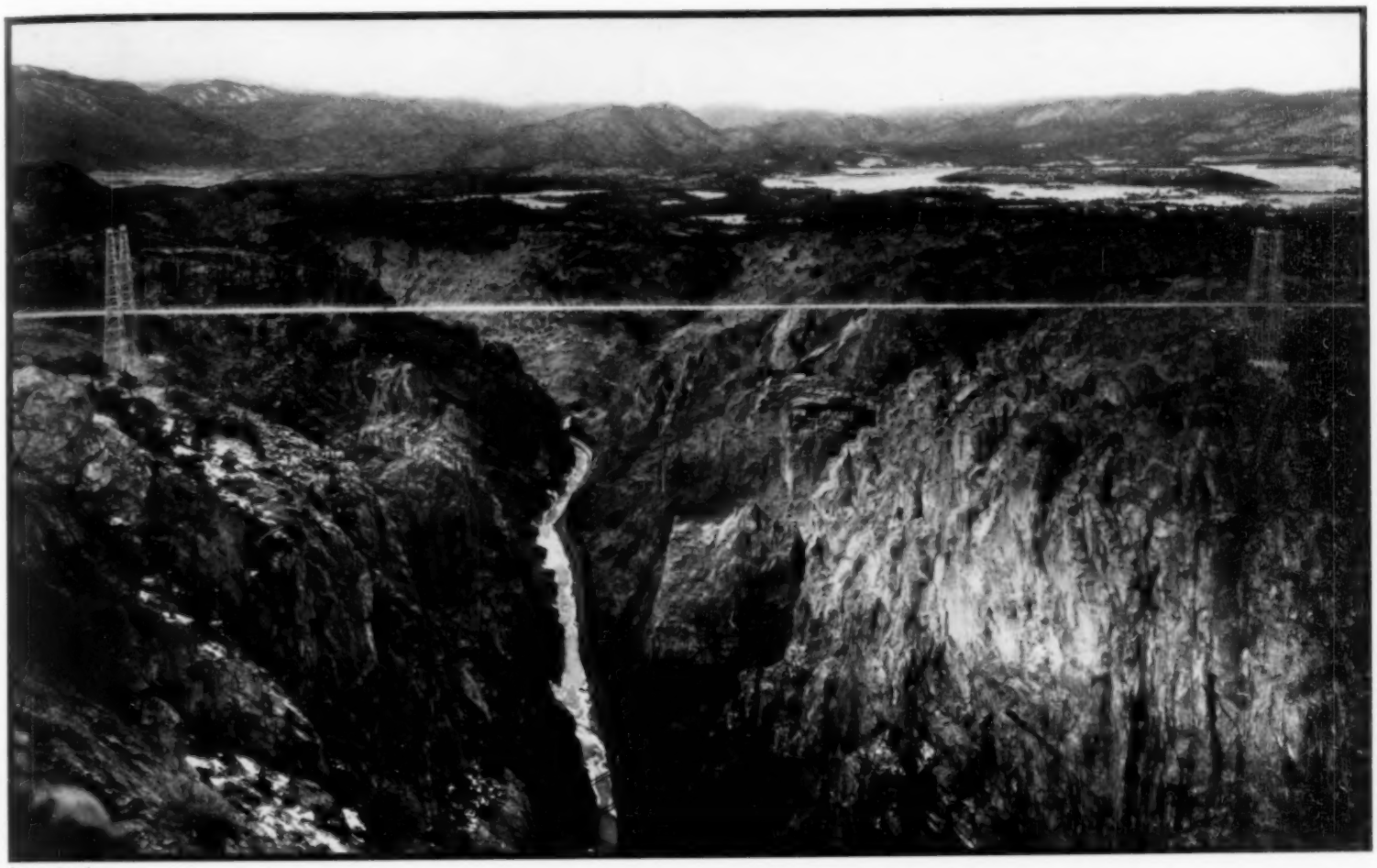
The Pennsylvania's active participation in the new $10,000,000 Baltimore Mail Steamship Company backed by the Baltimore Trust Co. and Roosevelt Steamship Lines. Formed to develop Baltimore as a seaport, the company will open in 1931 the first trans-Atlantic service out of Baltimore since the War. The Pennsy will supply rail connections and the use of the Canton Terminal docks. Also associated in the new line is Baltimore's other trunk railroad, the B. & O.—a strange bedfellow for the Pennsy.

The heavy depression in earnings. Class 1 railroads suffered a $149,350,000 decrease in net operating income for the first five months of 1930 (as against 1929). This is a 1.90 drop in investment return.

The downhill slide taken by rail stocks, largely as a result of poor earnings. Toward the end of the month the Dow-Jones average for rails was 128.88, just .81 of a point above the extreme low for last fall. During the last week of June, fifteen out of twenty-one representative rails broke through their November 13, 1929, low marks.

The long-awaited rate revisions by the Interstate Commerce Commission, which will mean a $10,000,000 to $12,000,000 increase in gross revenue for the western roads, and a $40,000,000 increase for eastern roads. The western and the New England rate structures, in particular, have for some time been recognized as in need of revision. Only class rates (traffic having high unit value and moving in limited quantities, as canned goods, machinery, etc.) are involved in the revision reports, which were written by the two big guns of the I.C.C.: Chairman Frank McManamy and Commissioner Joseph B. Eastman. In accordance with the Hoch-Smith Resolution, rates on agricultural products were not raised as much as other rates. The teeth of the Hoch-Smith Resolution, however, were drawn by a recent Supreme Court decision strictly limiting its application.

The suit brought by the government against the Elgin, Joliet & Eastern ("Chicago Outer Belt Line") to restrain it from transporting the products of U. S. Steel Corp., its owner. The question is: can the Commodities Clause (No railroad can haul commodities manufactured by itself or its subsidiaries) be interpreted backward?



International

A vital link in the transcontinental project of the Brothers Van Sweringen is the line of the Denver & Rio Grande Western that twists through the spectacular Royal Gorge of the Arkansas River. Above is one of the world's longest suspension bridges, in the background the Continental Divide . . . Bloody and prolonged, as every railroader knows, was the battle between the Santa Fe and the D. R. G. W. for the right to build through the Royal Gorge. Court injunctions were supplemented by gun fights between the rival construction crews camped on opposite sides of the gorge. A cannon was brought into action on one occasion . . . But that was in the last century. Today the Van Sweringens find themselves in a bloodless conflict with Arthur Curtiss James over the Royal Gorge, each of them controlling one-half the D. R. G. W. and neither willing to yield. The recent election of three Van Sweringeneers to the D. R. G. W. board is to be noted.

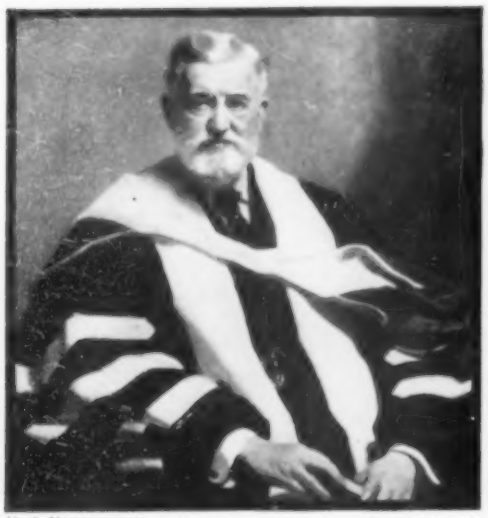
Once More, the Vans in the Van

EASILY dominant in the month's railroad developments were the Brothers Van Sweringen—or their enemies. It is growing more and more true that practically nothing can happen among the railroads that does not affect in one way or another the far-flung Van Sweringen interests. The rail sensation of the month was the fact that the only two large railroads to show an increase in May net operating income were the two main stems of the Van Sweringen system: the Chesapeake & Ohio and the Missouri Pacific. The latter, at least, is not entirely unexpected: MOP earned $10.41 a share on its common in 1929 as against $7.15 in 1928. Whatever the explanation, the good news comes at the psychological moment for the Van Sweringens, whose rate of expansion of late had been rather rapid . . . Impressive evidence of this expansion was the opening of the brothers' new $88,000,000 Union Terminal in Cleveland. The total project, which includes a post office, a bank, and a Builder's Exchange, comes to well over $150,000,000. The tower is 708 feet high, the tallest west of New York. Every railroad that reaches Cleveland except the Pennsylvania will use the new terminal, namely, the New York Central, the Big Four, the Wheeling & Lake Erie, the B. & O., and the Nickel Plate . . . Of major financial interest was the move of the Van Sweringens' key road, the Chesapeake & Ohio, to split its stock four for one. Voted last fall by the directors, the proposal has now been approved by the Interstate Commerce Commission. The split-up sets a precedent in railroad financing. Frequently as industrials and utilities have split their stocks in recent years, never has a railroad done so. The Van Sweringens expect to secure a wider public distribution for the stock, which in turn means that the much-pyramided Van Sweringen rail holdings will be more independent of stock market fluctuations. The move appears to be canny as well as iconoclastic . . . Next to the Van Sweringens themselves, the most active railroaders have been their two chief opponents: Arthur Curtiss James and the Brothers Taplin, of Pittsburgh. Mr. James, whose control of Western Pacific is the last barrier between the Van Sweringens and the Pacific, was well pleased when the I. C. C. finally approved his pet scheme for linking the Western Pacific and the Great Northern. Specifically, the I. C. C. approved the building of 200 miles of line to connect the two roads into a second through route between California and the Northwest, the only existing route being that of the Southern Pacific. And on the Eastern front, the Brothers Taplin, ancient and bitter foes of the Brothers Van Sweringen, revealed to the I. C. C. that their plans for a fifth trunk line had by no means been abandoned . . . Thus even with their merger activities at a standstill the Van Sweringens continued to occupy the foreground of the railroad picture.

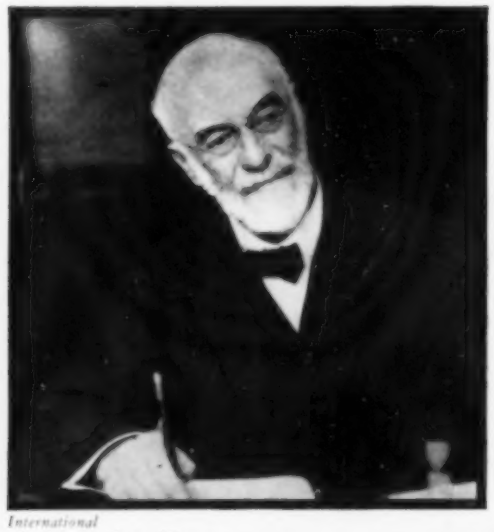
I. & I.

WHEN the Van Sweringens reorganized the Missouri Pacific, they left out former Chairman Williams and half the board of directors, but they took care to include President Lewis Warrington Baldwin. For the last thirty-four years President Baldwin has been operating railroads, and never more successfully than since 1923, when he became president of the Missouri Pacific.

Interviews and



U. & U.



International

The 25,000-volume collection of Shakespeariana made by the late Henry Clay Folger (above), one-time chairman of Standard Oil of New York, is said to equal that of the British Museum. The Folger will leaves $10,000,000 to build and maintain a Shakespeare library in Washington.

At the age of eighty-seven Dr. Stephen Moulton Babcock (left) receives this year's Capper Award (a gold medal and $5,000) for his great works in agricultural chemistry. His most important achievement is a machine for measuring the amount of butter fat in milk. It was this device which gave Dr. Babcock's university, Wisconsin, its nickname of "the butter fat university." Wisconsin, fittingly enough, is one of the great dairy states, and numbers among its teeming herds the 75,000 cows that supply A & P with evaporated milk. The Babcock test is a cornerstone of modern dairy practice. The "Babcock test," once remarked an agricultural Governor, "has made more dairymen honest than the Bible has ever made." However, its inventor has consistently refused to take out patents, has not made a cent out of the machine since he invented it over thirty years ago.

Keystone

The late William Boyce Thompson leaves a fortune (gained in copper, sulphur, oil, gold, and diamond mining) of over $85,000,000.

International

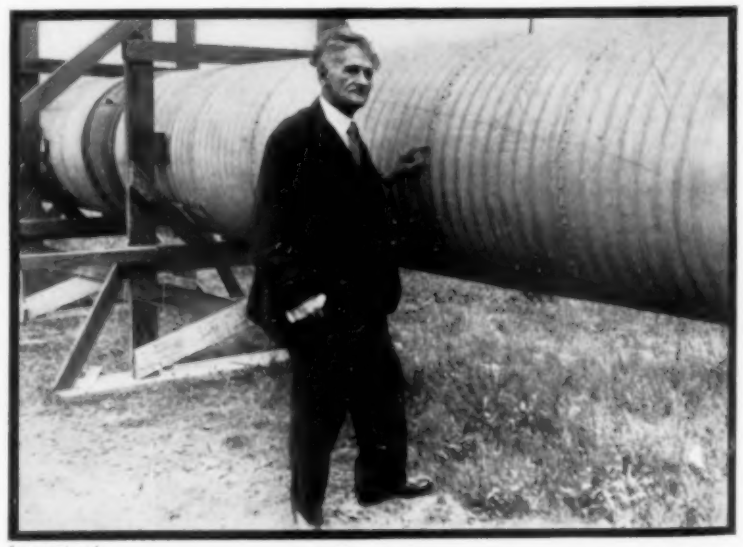
The late Harry C. Stutz, designer and manufacturer of fast automobiles, leaves a notable collection of firearms.

U. & U.

Tubes a mile long have been figuring in the month's scientific news. M. Georges Claude (above) lost one, and Professor A. A. Michelson (below) gained one. M. Claude, inventor of the Neon light and many an industrial process, saw his giant tube slowly sink in the ocean off Havana after snapping two one-inch steel cables. He planned to use the tube to generate power from the temperature differences between the surface and deep waters. The tube was 5,905 feet long, cost $1,000,000. Though it was the second tube he had lost, M. Claude has received from the Cuban Government financial and technical aid, and is now starting to build a third tube. Meanwhile Professor Michelson, the University of Chicago's noted astronomer, is measuring the velocity of light in a test tube a mile long. Such a length is necessary to insure absolute accuracy. The tube, a segment of which appears in the background, *begins* at Santa Ana, California.

International

Arthur Stanley Eddington (left), of Cambridge University, is the author of that most lucid and accurate of scientific popularizations, *The Nature of the Physical World*. At the World Power Conference recently held in Berlin (see page 84) his speech created as much interest as did that of Ambassador Sackett. Of the future of power he prophesied: "We build a great generating station of, say, 100,000 kilowatts capacity, and surround it with wharves and sidings where load after load of fuel is brought to feed the monster. My vision is that some day these fuel arrangements will no longer be needed. Instead of pampering the appetite of our engine with delicacies like coal or oil, we will induce it to work on a plain diet of subatomic energy. If that day ever arrives, barges, trucks, and cranes will disappear, and a year's supply of fuel for the station will be carried in a teacup—namely, thirty grams of water."



International

Faces of the Month

Keystone

Ignace Jan Paderewski was the subject of a notable interview by P. J. Philip, forty-two-year-old Scotsman, long-time Paris correspondent of the New York *Times*. There was little chatter. "This age is not propitious for art," plunged Mr. Paderewski. "It is an age of economics. It is an age of production, and as such it has great value, for it has brought greater comfort to the masses. If it is well directed it may later come to be regarded as one of the most valuable epochs of this ever-changing system of human life.

"But genius, and therefore the creation of great art, is impossible under the present system of living. Genius requires not only the divine spark . . . but also favorable conditions . . . what are most essential are quiet and intense concentration of mind. To have that nowadays one must retire to a hermitage to live, and even in a hermitage one cannot entirely escape the excitement . . .

"There is another handicap to the creativeness of art in the increasing tendency toward collectivism. People are more and more working in groups . . . But no poem or painting was ever created by a syndicate . . . Today the individual is being merged and lost in the group . . . When we pass beyond this age of comfort, there may be a renaissance. I do not predict this will happen, for I am no prophet. But art is luxury, and when people can afford luxury they usually look for artistic enjoyment."

Courtesy Caterpillar Tractor Co.

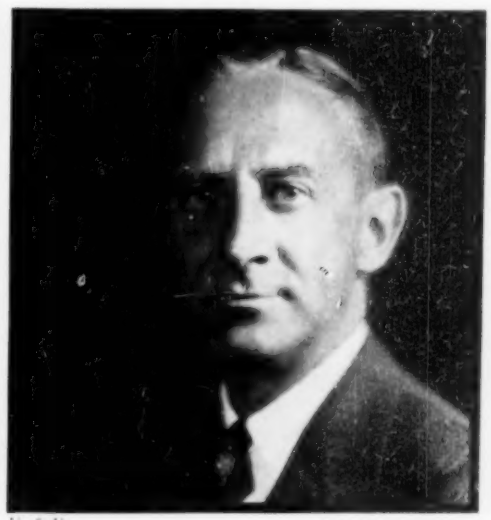
The New York *Herald Tribune's* Mr. Edward Angley, a French Texan in his thirties, obtained an interview with Thomas D. Campbell, biggest U. S. wheat farmer (95,000 machine-cultivated acres of wheat in Montana which yield 500,000 bushels a year). Mr. Campbell was again on his way to Russia, where he will spend three weeks in giving expert advice on Soviet farming problems. "I didn't much want to go," said Mr. Campbell. "Every time I said I couldn't they'd raise the offer. They've got plenty of money, all right, and they pay on the barrel head . . . Three weeks may not seem a long time, but I know farming . . . Why, I can ride over a field in the dark, and I can tell by the way the automobile bumps whether it has been well plowed or not. That's my business, farming.

"By golly, Russia is the biggest market in the world for American goods, if we'd only go after it. And we ought to do it now, because there is enough business there for American manufacturers to take up all the slack in this business depression . . . They want American goods, and they've got the money to pay for them. Of course, they want credit, and granting credit is for every man to decide for himself. But they've paid on the barrel head so far. My first trip to Russia resulted in three or four hundred million dollars' worth of business for American manufacturing firms. I got them $185,000,000 in agricultural implements and machinery alone. This time I expect an even greater result.

"Don't make any mistake about it. In three years Russia will be the biggest wheat exporting country in the world. The U. S. is going to have to reduce production."

Margaret Bourke White

Albert Russel Erskine (left), president of Studebaker, announces a radical improvement in automobile design: "free wheeling." Whenever the car goes faster than the engine, the rear wheels are automatically disengaged from the engine. Smoother riding is the alleged result . . . The man responsible for the nation's latest fad is Garnet Carter (center). Mr. Carter is proprietor of Fairyland Inn, on Lookout Mountain, Tennessee. He is also inventor of the Tom Thumb Miniature Golf Course. His idea started out as a putting green on the lawn of his hotel, gradually adding tunnels, bunkers, traps. The idea spread, was patented. Mr. Carter now has



U. & U.

several factories turning out cottonseed-hull greens and hollow-log tunnels. So far about 5,000 courses at $2,000 apiece have been sold to concessionaires . . . President Donald Symington (right), of Baltimore Trust Co., heads the new Baltimore Mail Steamship Co. (see page 84).

Career Milestones

THOMAS F. LEE, *born February 23, 1877, in Newark, Ohio, now of Scarsdale, N. Y., and South America*

ROBERT C. ADAMS, *born December 21, 1872, in Scranton, Pa., now of Newtown, Conn. and New York*

U. & U.

CALVIN COOLIDGE, *born July 4, 1872, in Plymouth, Vt., now of Northampton, Mass.*

Photo by Bachrach

REED SMOOT, *born January 10, 1862, in Salt Lake City, now of Provo, Utah, and Washington*

THOMAS SOVEREIGN GATES, *born March 21, 1873, in Germantown, now of Chestnut Hill, Philadelphia*

Keystone

JOHN MARTIN THOMAS, *born December 27, 1869, in Ft. Covington, now of Rutland, Vt.*

JOHN RAYNARD TODD, *born in Johnstown, Wis., October 27, 1867, now of New York, Easthampton, L. I., Camden, S. C.*

U. & U.

JAMES GILBERT WHITE, *born August 29, 1861, in Milroy, Pa., now of New York*

¶Mr. Thomas F. Lee knows South and Central America. He began as an engineer. His first independent business adventure was in Mexico, with pineapples, his next in Mexican real estate, then reclamation of land in the Rio Grande Valley. He attracted attention by his economic and social studies of Salvador. In 1927 he joined F. J. Lisman & Co., Manhattan bankers.

In 1927 he conceived the idea of a fixed type of investment trust. F. J. Lisman & Co. was not very much interested. Mr. Lee started it with a group of friends. The last semi-annual dividend was $12,000,000. More than $100,000,000 have been invested in the company, North American Trust Shares. And now Mr. Lee retires. He will continue his South American studies, will publish a series of five books commissioned by a prominent university. If his interest in South America declines (which is doubtful) he will study Russia. He will also publish some poems he has never felt like releasing before.

¶At the age of twenty-one Robert C. Adams was director of almost fifty companies. His latest achievement was election as director and vice president of Bancamerica-Blair.

At fifteen Mr. Adams held his first important position as secretary of the Scranton Passenger Railroad Co. His *forte*, however, is not utilities but bonds. He likes modern painting, Stravinsky, and Charpentier's *Louise*. He used to paint "for my own amazement" and play the cello "and damn badly, too." He is one of the many successful members of the Henry Adams family.

¶"We need more faith in ourselves. Largely because of some decline in trade we have set about finding fault with nearly everybody and everything. We are told the President is wrong, the Congress is wrong . . . Yet our country, our physical properties and our industries have changed very little from a year or two ago when people were fairly content . . . My countrymen, it is time to stop criticizing and quarreling and begin sympathizing and helping!" Thus did Calvin Coolidge begin his career as daily newspaper paragrapher. Though phrase and rhythm were familiar, the stock market did not respond to its one-time idol with its old-time fervor. But there are other Coolidge paragraphs to come.

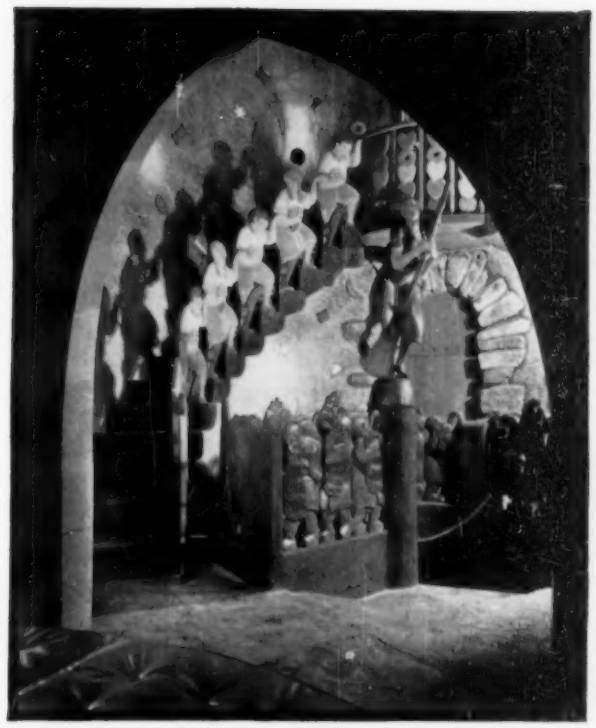
¶Father of six children, third highest dignitary of the Church of Latter Day Saints (Mormon), Senator Reed Smoot, humorless, indefatigable chairman of the important Senate Finance Committee, reached the zenith of a career largely devoted to the financial affairs of his country. He accomplished the passage of his Hawley-Smoot tariff bill, which calls for the highest average tariff in the history of his country. Another milestone was provided the Senator this summer by his marriage (for which the Salt Lake City Temple was specially opened) to Mrs. Alice Sheets, a Mormon of Salt Lake City whom he met at a Mormon service in Washington.

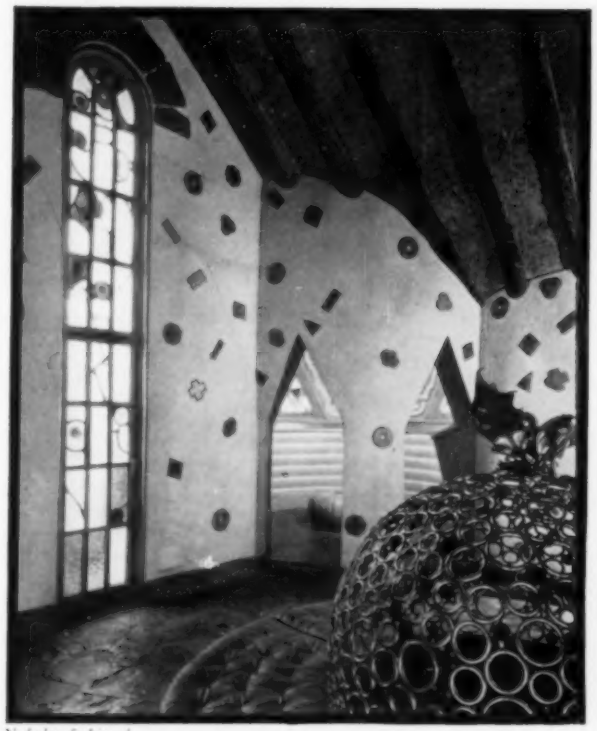
¶When Thomas Sovereign Gates went to Germantown Academy he preferred reading to sports. Later this quiet and pleasant young man reached what many will consider the corona of a financial career: partnership in J. P. Morgan & Co. and Drexel & Co. Like another Morgan partner, Dwight Whitney Morrow, Mr. Gates had desires beyond the holding of his much coveted position. "The supreme need of American society," he said, "is for men who can think." Accordingly when it was offered to him this summer, he accepted the presidency of his alma mater, the University of Pennsylvania.

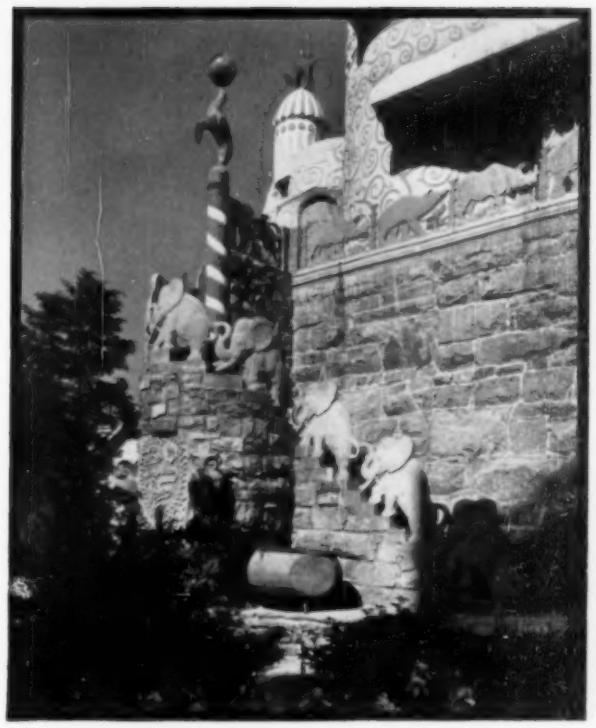
¶For twenty-two years Dr. John Martin Thomas devoted himself to college administration. For four years he was president of Rutgers University. His administration was marked by sound business policies. This summer Dr. Thomas returns to Vermont, where he was long president of Middlebury College. Not, however, as educator, but as first vice president of the National Life Insurance Co. of Montpelier.

¶To John Raynard Todd of Todd, Robertson & Todd, Manhattan engineers, is going credit for influencing John D. Rockfeller Jr., David Sarnoff, of Radio Corporation, and Hiram S. Brown, of Radio-Keith Orpheum, to build in New York a huge Radio City covering three blocks. It will cost approximately $250,000,000. Mr. Todd's firm will be contractors and engineers for the project. Its selection crowns a career which has included the building of Manhattan's Graybar Building, Cunard Building, and the Barclay Hotel (where Mr. Todd has a suite).

¶Retiring from the presidency of J. G. White & Co. Inc. (engineers, investment bankers), Mr. James Gilbert White this summer became chairman of the board and was succeeded by his son, James Dugald White, of whom it is said that no photograph exists. The elder White leaves to his son an organization which has built the Ritz and Waldorf hotels in London, railways in the Philippines, Holland, and New Zealand, is now acting as engineers for Abyssinia to dam the waters of the Blue Nile.







Nyholm & Lincoln

Urban Builds a Gingerbread Castle for Wheatsworth, Inc.

THIS fantastic structure is unquestionably the advertising stunt of the month, perhaps of the year, for such stunts are less popular than they once were. Sophisticated, indeed, will be the automobilist who passes through Hamburg, New Jersey, without a curious glance at the strawberry turrets and the vanilla-icing roof of the Wheatsworth gingerbread house. If he stops to inspect the building, he will see many a curious sight, perhaps learn somewhat of Wheatsworth, Inc., and the whole wheat flour it grinds in its mill near-by. President Floyd H. Bennett, of Wheatsworth, conceived the idea from the witch's gingerbread cottage at a performance of *Hänsel and Gretel* at the Metropolitan two years ago. He commissioned Joseph Urban, who designed the set, to build Wheatsworth a super-gingerbread house. This Mr. Urban did with great gusto. The walls are of poured stone brightly tinted. Inside there are many strange and wonderful things: notably, a *Hänsel-and-Gretel* staircase built on the cantilever principle (upper right), a birthday cake room, a room where sea horses, bats, and Al Smith's brown derby repose in happy confusion, a plum pudding room with walls studded with cookies (lower left), and a huge wire spider web from which dangles an alarming spider with large glass eyes. On the the lawn outside the castle are a witches' cauldron (capacity: eleven children) and a grotto with goblins lurking therein. The cost of the miniature palace was only about $50,000. Mr. Urban worked on its fantastic details for two years.

This Month's Issue of Fortune

Is subjected to comment from the stock market angle.

(By Carlton A. Shively of The New York Sun)

THE Turksib Railway, with its promise of greater Russian production of cotton and wheat, is a long way from the corner of Wall and Broad. But the prices of wheat and cotton are not. They are the key to the future of the stock market.

. . .

National Cash Register has suffered with other office appliance and business equipment manufacturers in the worldwide depression. Earnings in the early part of the year were only about half those of last year. The company's earning record, goodwill, strong asset position, and the possibilities inherent in new models, such as the Ellis adding typewriter, have sustained the stock at a level showing a yield of a little over 6 per cent on the regular $3.00 annual dividend. Even that price is less than one-third the fantastic figure reached during the "new era." Unfortunately, N. C. R. was shoved ahead by a pool which was working for quick and large profits, regardless of intrinsic worth of the stock. Its fall was the harder because it had climbed so high.

. . .

Outstanding among the securities of Harris, Forbes & Co. clients traded on leading exchanges is Cities Service common. The stock is the despair and the hope of hundreds of thousands of small investors who bought it during the gold days of 1929 not, however, at the solicitation of Harris, Forbes, whose connection with the company has had to do only with the sale of bonds. Last October it crashed from its peak of $68.50 to $20 a share. Working against heavy odds, it climbed back half the distance this year, only to be driven down again and to flutter around in the middle twenties. This in spite of the growth of earnings at a pace that would have rocketed the stock a year ago. The company report showed earnings of $1.34 on the common. Quite plainly the stock is still earning a much smaller percentage on its market price than are most stocks; but on the other hand it is growing rapidly.

Associated Gas & Electric is another example of the sluggish response of small investors nowadays to increasing earnings for volatile public utility shares. Although for the year ending with last May the system more than doubled its surplus after charges, the stock hangs around the lowest levels of 1929-30.

Northern States Power and Central Public Service early in July were selling around half their high price of 1929. Floating supply of the latter has been reduced by acquisition of more than a quarter interest by Public Utility Holding Corporation, the Harris Forbes-United Founders venture which has been making extensive foreign purchases this year. Public Utility Holding stock, selling around $15 a share last month, showed a depreciation of nearly 50 per cent from its earlier high.

. . .

Sports stocks never have shared the popularity of the so-called amusement shares—the stocks of theatrical, radio, and graphophone enterprises. Wall Street's interest in sports has been abundant and of a practical kind, but it has never been called upon to do much financing for the purveyors of sports equipment. In Spalding the Stock Exchange has both a common and a preferred stock of the principal maker and distributor of sporting goods and equipment. There is little interest in the preferred, which is being steadily retired through operation of the sinking fund.

Even less attention is attracted to the common stock. It was brought over to the Big Board from the Curb Exchange last year, where it had sold at $300 a share before its five for one split. On the Inactive Post the Spalding shares are more unobtrusive than most of their playmates there, which usually means a narrow price range. Sometimes a week or more goes by without a sale of the stock. Paying a $2.00 dividend, Spalding common is selling on a yield basis which is equivalent to branding it as an unseasoned issue but one on which the payment is considered fairly safe.

. . .

Skepticism of the investment merits of a cosmetic company helped to lop off more than sixty points from the price of Coty, Inc., in the past eighteen months. It fell that much, in fact, last year, but after rallying from $18 to $33 a share the stock dropped close to $15 a share on omission of the dividend before the decline could be checked. Lehman Corporation, which might be allowed an opinion on the stock's merits, owned 18,800 shares at the end of last December. Before June 30 of this year the corporation had sold 7,400 shares. However, the investment is still a large one. At the same time they took a block of Colgate-Palmolive-Peet, manufacturer of more than $100,000,000 worth of soaps and cosmetics annually. But for the market break last year, Colgate might by this time have been lodged with other bedfellows, including Hershey Chocolate, in a new foods and soaps holding company, under the auspices of the National City Bank.

Beauty stocks, which formerly were given a much less euphemistic cognomen by ribald stock market traders, always have changed their color often. Vivadou in former years was a great favorite with the quick firing boys around the brokerage houses, and the Morgan interest in Procter & Gamble was the source of many radically unsound rumors.

. . .

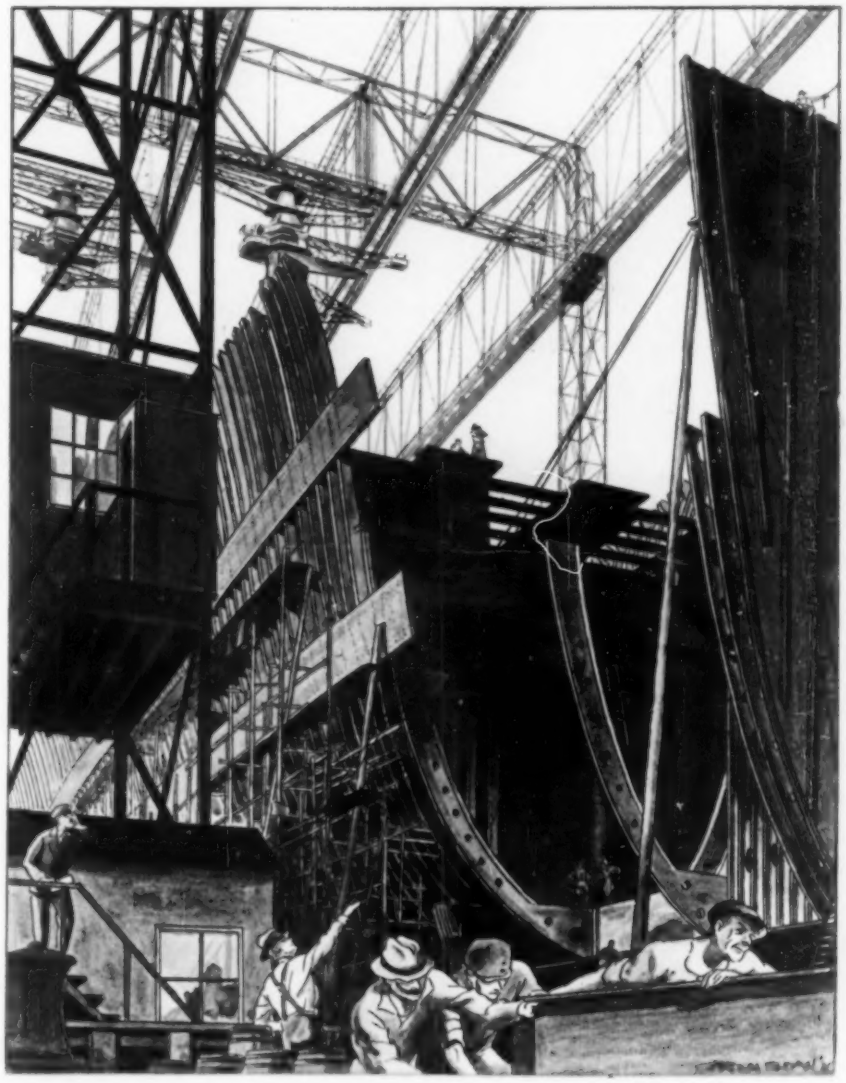
Stocks of companies which build, finance the builders, supply them with materials, and play the rôle of landlord have uniformly participated in the 1930 bear market. Where 1929 inflation was extreme (witness, Johns-Manville at $242.75 a share), the 1930 deflation has been especially severe (ibid, around $75). American Radiator & Standard Sanitary brings less than half its best price of 1929. It has been mighty seldom in the past few decades that American Radiator could be bought to yield as much as 6 per cent. Its chairman, Clarence M. Woolley, has been too shrewd a manager for that. United States Realty & Improvement, also at about half its best of last year, has been selling to yield more than 10 per cent, the market reflecting some doubt of the safety of the $5.00 annual dividend. Chairman Harry S. Black has built up Realty to the position of the world's largest landlord—with the single exception of the Duke of Sutherland. Many an imposing building stands to the credit of the construction subsidiary, the Fuller Company, which built and formerly owned the famous Flatiron Building. Realty is at once builder and owner, some of its most valuable properties being hotels, such as the Plaza and the Savoy-Plaza. The stock has been affected by the weakness in realty values in New York as well as by a poor stock market, but most of its properties were acquired in the pre-inflation era.

Otis Elevator has fared about as well as any stock in the building industry, although it too has been subjected to revaluation. Rising earnings have helped, the first quarter showing a gain of about 4 per cent, with an increase in earnings per share from eighty cents to eighty-three cents. Even so, a price of $60 would be the equivalent of only $240 on the old stock, which reached a high of $450 last year.

In Equitable Office Building Corporation is one of the best illustrations of the importance of location and design for insuring realty profits. Management plays its part, but because of the other factors Equitable has been able to raise rents and keep virtually a full house in spite of the lure of the new skyscrapers in the financial district. The price range last year was only ten points, in spite of the general disaster. During most of this year the stock has swung five to ten points above the 1929 high.

Builders of Ships

are builders of Trade



Every new ship that glides majestically down its ways into deep water is a symbol of growing economic power for the nation whose flag it flies. Not by accident have the great seafaring peoples of history dominated the commerce of their worlds. Throughout the eras of man-power, sail and steam, the romance of the sea has been definitely linked with the broader romance of business.

As business methods have progressed with the times, so also has shipping. Today the finest marine service depends upon electricity for much of its modern efficiency. In passenger liners and freighters, tugs, river towboats, submarines and battleships, Westinghouse electrical equipment drives the propellers, mans the pumps, controls the rudder, speeds the handling of cargoes. Westinghouse contributions in this field are typical of its activities in every branch of industry.

Tune in the Westinghouse Salute over WJZ and the coast-to-coast network, every Tuesday evening

Westinghouse

Arden

[*Continued from page 41*]

National cosmeticists have seized on the salon as a means to boost their trade. The Dorothy Gray Salon and Products are owned by the great commercial druggists Lehn & Fink, who also control Pebeco tooth paste and Hinds three creams. In the Gray salon is a free make-up clinic. Any lady wandering in from the street may enter a spick-and-span laboratory filled with test tubes and jars of cosmetics and be made up by Gray experts. Conducted under the most exacting light conditions, this process is very successful in convincing prospective clients that make-up should be individually adapted. Coty, as we have mentioned, owns the Marie Earle salons, conservative, long-established specialists in oil treatments for dry skins. Primrose House, which enjoyed a period of high favor under the nominal leadership of Mrs. Gouverneur Morris, paled but is now being revivified. With Arden, Gray, and Rubinstein, it is one of the Big Four. Such houses are well established; they are in the tradition; their deeds may be profitable but they are scarcely challenging. If Elizabeth Arden fears for her preëminence at all, it is not of these she thinks. But she may consider the Alexandra de Markoff line, which is making the same highfaluting appeal with cosmetics as Matchabelli does with his perfumes. And there is Kathleen Mary Quinlan, Pond's protegé, whose forte is treatments to soothe and beautify tired eyes.

But a gathering of all the names thus far presented, from Arden the elegant to Seligman & Latz the multifarious, would not do justice to the salon field. The first of the great ladies of the salons was Helena Rubinstein. And though the Rubinstein salons have passed their days of great chic, the Rubinstein business is still most probably the biggest of its kind. Delicately matched cosmetics are the specialty; the exercise fetish is not emphasized as at Arden's. With her Pasteurized Face Cream, Valaze Beautifying Skin Food, and Valaze Skin Toning Lotion, Mme. Rubinstein invites practically the same facial treatment as Arden. But she offers her advice indiscriminately, not seeking selected outlets. Her demonstrators have appeared in such socially dubious locations as the New Jersey State Convention of School Teachers (chalk dust is bad for the complexion) and the Marie Antoinette (ladies') Room of the Paramount Theatre in New York. This cosmetics for the masses policy netted Rubinstein a profit equal to if not exceeding Arden's. Several years ago she sold out to Wall Street for several millions; just after last fall's panic she is said to have bought back a controlling interest at a price far beneath value. One of seven Russian sisters from Cracow, she has lived and prospered in many lands. Buxom, swarthy, addicted to smartly exotic dress, she has a husband named Edward Titus, who now sells books in a stall by the Seine.

Potpourri

The hair and the cuticle. New skins for old. Apparatus for Adonis, and sundry other themes.

NO ONE has yet made much money from the beautification of men. But there are many attempts and many expectations. Perhaps 15 per cent of the clientele of the leading hair cultivators are masculine (men like to have their heads rubbed). Guerlain gets $11 for a toilet water called *Bouquet de Faunes*. Houbigant markets a similar lotion, *Fougère Royal*, and Pinaud does well with *Lilac Vegetal*. D'Orsay makes *Duo D'Orsay*, intended for use by both man and wife. Armand markets the various *Florian* products. Coty proposes an elaborate men's line. More and more barber shops are giving facial massages which resemble in process and effect the delicately scented feminine rituals. Dorb the Chemist, chain druggists of New York, report that more than 20 per cent of their toiletries, including vanishing creams and powders, are bought by men. Throughout the beauty business the tendency is to believe that men's fears of effeminacy are being overcome. The increasing sale of men's cosmetics is attributed to the growing emphasis on appearance in the business world.

. . .

The firm of Northam Warren is the unquestioned leader in the nail polishing business. It sells the leading cheap line—Cutex (thirty-five cents), the leading medium line—Glazo (fifty cents), and the leading quality line—Peggy Sage ($1.25). It directs plump, hearty, colloquial Peggy Sage as she directs her New York cuticle salon. She it was who invented the pinkish, glistening finger nail and popularized it on the gracile fingers of Lady Duff-Gordon. On the theory that nail and costume colors should match, she now offers nail polishes in various tones, as illustrated in these pages. But this radical artificiality, at cross-currents with the prevailing natural mode, will probably never be nationally successful.

. . .

Everyone knows of Madame Walker of New York who made a fortune with an invention to remove the kinks from negroid hair. Her success is symbolic of the fact that negresses seek to minimize their racial characteristics. They will not buy cosmetics especially adapted to dark skins; they use the white woman's blue evening powder in the daytime. They buy skin bleach by the barrel. According to *Aromatics*, the cosmetic best-sellers to negroes are Lux, Golden Peacock Bleach Crême, Pluko Hair Dressing, Nadinola Bleaching Cream, Black and White Beauty Soap, Madame Walker's Beauty Soap, Dr. Palmer's Beauty Soap, K.K.K. (Kongolene Knocks Kinks), and Washington Belle Skin Victory. One glance at the nomenclature of most of these products should convince anyone that most of the business is racial. Although there are some 12,000,000 negroes in the United States, the big national cosmeticists have not entered this field. Fear and false pride prevent them. *Aromatics* tells of a Chicago Black Belt drug store whose best-selling soap is made by a St. Louis manufacturer, white. Because of the soap-maker's refusal to deal openly with the negro trade, the druggists buy the soap covertly through a third party.

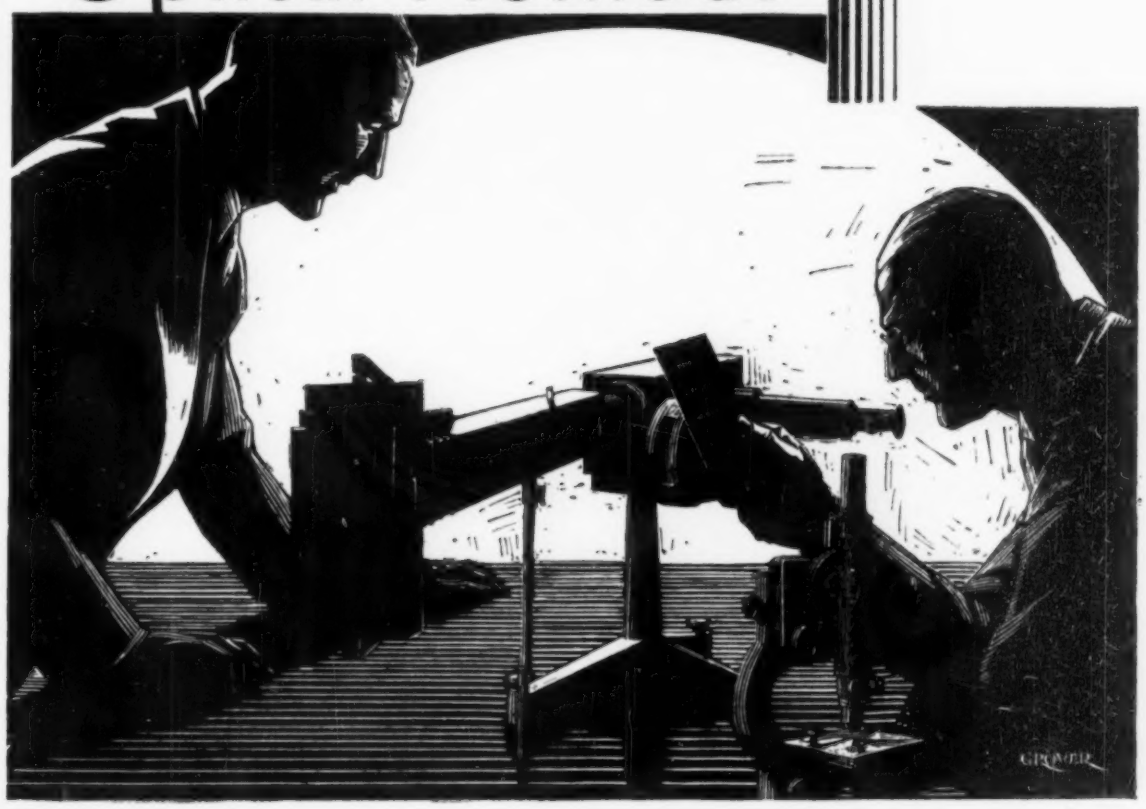
. . .

Many are the salves and clays which purport to improve skin condition by some sort of organic stimulation. Favorite in the past was Mineralava. Most conspicuous today, Amor Skin reputedly contains the skin hormones of dasypodia, or tortoises, which it supposedly imparts to the skin of the user. Enough Amor Skin for three months' treatment costs $16.50 ($25 for double strength). It sells well. Velo-derma, the newest, is promising commercially. Advertised with a great deal of scientific patois, all these preparations are questioned by disinterested scientists.

. . .

No preparation has ever been discovered that will grow hair on a billiard ball, or, for that matter, anywhere very successfully where it is not. Nor has any completely satisfactory depilatory (except the expensive electrolysis) ever been developed. Yet hair cultivation is a thriving trade. One can judge for one's self how uncertain are its principles by a comparison of the leading cultivators. The three great names in the expensive trade are Frances Fox, Ogilvie Sisters, and Martha Matilda Harper, all of whom own or market through nationwide chains as well as through department and drug stores. The Ogilvies and Harper advocate brushing; Fox is sure that brushing destroys the hair. The Ogilvies and Harper believe in only infrequent shampooing—perhaps once a month with treatments in between; Fox declares that hair should be shampooed once a week and left alone between whiles except for a coarse toothed comb and ointments on the night before the shampoo, or more frequently, if the condition of the hair warrants it. Harper

When competition grows keen IMPROVE your PRODUCT by Optical Methods



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LAWN TENNIS & YACHTING"

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NEWPORT PALM BEACH

praises "dry" shampoos (powder shaken in and combed out); Fox and the Ogilvies are definitely opposed to them.

The biggest name of the trio is Martha Matilda Harper. An elderly Christian Scientist of Rochester, New York, she began her work forty-two years ago with a procedure that was revolutionary. Instead of forcing her clients to bend forward over a wash basin, their faces trickling, their eyes soapy, she tipped them backward and kept them comfortable while she washed their hair. More than 400 shops now use her method and products. The buxom founder still trudges to work every morning. Most of the Harper profit is made on lotions and tonics.

. . .

It is estimated that the citizens of the United States dyed their hair 40,000,000 times last year. The annual business of some individual firms approaches $3,500,000.

There are three principal types of hair dye. Vegetable extracts, oldest and absolutely harmless to the scalp, coat the hair and do not color the cells. Most of them are in the reddish category—henna, reng, tea extracts, wood extracts (logwood, walnut, et al). Metallic salts dyes, producing any color, but best in light and medium shades, include silver nitrate, slightly harmful to some types; lead salts, gravely toxic and forbidden by law in civilized countries; and the little-used iron sulphate. These dyes oxidize the hair on its surface. The synthetic dyes, penetrating, oxidizing, are the most common commercially. Two of the most familiar are para-phenylenediamine, very toxic, and paratoluenediamine, which may be de-toxicated, rendered harmless to almost everyone. The susceptibility of an individual to paratoluenediamine may be tested by painting part of the skin behind the ear with the dye and covering it with collodion; if a swelling occurs the person should not use the dye. If a person is not susceptible, these dyes produce the best results.

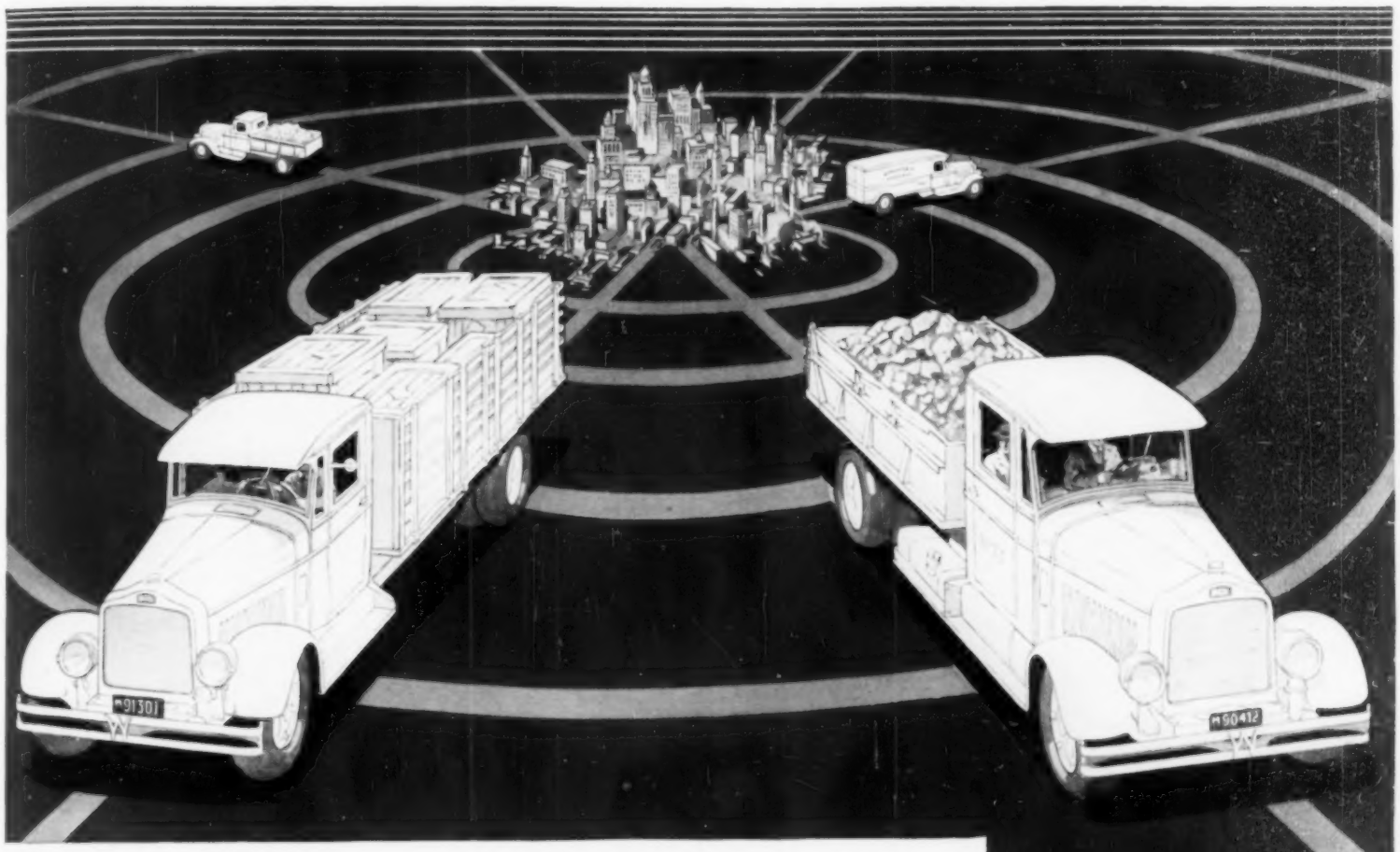
. . .

In bobbed-headed time, hair dressing devolves mainly upon the permanent waver. As he bakes his curves into the hair, he is creating whorls and glints and he later "sets" the wave—fixes its sculptural character—by water or finger waving. Most women require permanents twice a year. The process takes two to three hours, costs from $10 to $40. Locks of hair are wound around metal rods, which are then covered with heat-conveying caps. The winding takes hours; the heating only a few minutes. Although asbestos insulates the head from the hot rods, waving is apt to be an uncomfortable process. Thus a successful waver is he who not only sculptures the hair well, but preserves the comfort of the client.

Permanent waving thus depends mainly on operators rather than machines, which have always been much alike. Recently, however, the Nestle-LeMur Company developed the Nestle Triplex which eliminates the heat-conveying caps, provides heat through the curling rods themselves. Much lighter on the client's head, this apparatus may be plugged into a convenient electric socket, is designed for mobility. With the Triplex, Nestle-LeMur has permanent-waved a flagpole sitter on top of the Paramount Theatre in St. Louis. With 25,000 shops using its preparations, Nestle-LeMur's net income last year approximated $900,000. Eugène, one of its most conspicuous rivals, markets to the "smart" trade a more expensive machine.

. . .

Actresses have to have good complexions. But even if the average woman with an ugly, dry skin led an actress' life for a few months, her complexion would probably be unusual. Merely in the process of putting on and taking off theatrical make-up, she would subject her face to a vigorous cleansing and massage. On matinee days this might happen six times. And for the duration of the drama her grease-painted face would be splendidly lubricated with a mask of oil. Hence the claims of theatrical cosmeticists that their products contain the "beauty secrets of the stage" are somewhat exaggerated. Dumb-bells are undoubtedly strengthening, but only if one uses them. The chief theatrical cosmeticists who sell wide varieties of materials for non-professional use are Stein of New York, principal purveyor to the American legitimate stage, Max Factor of Hollywood, cosmeticist extraordinary to the cinema world, and Leichner of Berlin, Paris, and Vienna, oldest (1853) and perhaps most famous name in the business.



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M. Coty, Mr. Levy, Beauty's Big Business Men—*Continued*

European associates about $4,100,000 on the nose and $12,000,000 more in annual installments of $4,000,000 on October 1 of 1930, 1931, and 1932, making a total of $16,100,000. For this the Coty-American was to get about 65 per cent of the stock in the five Coty companies of Europe, which, with what it already owned, gave it about 80 per cent. In view of the fact that the interest acquired in the European companies was earning only some $1,200,000 per annum, this transaction cannot now be considered conservative in the light of subsequent events. Coty-American paid M. Coty about 13½ times earnings. This—so different from 1925—was entirely in line with August, 1929, financial psychology. For at that time the original $37 stock was selling at the equivalent of $240 (18 times their current earnings), and our happy original investor had a profit of some 550 per cent in addition to his handsome dividends. Such being the case, he was delighted to buy more stock, and with the money raised by an offering of additional stock, Coty-American paid its first installment of $4,100,000.

Then came the crash. Coty dropped from the aforementioned $240 to the equivalent of $108 on December 31, 1929. Obviously no more stock should be sold. So Coty-American decided in June to pass its dividends in order to pay its next installment of $4,000,000 out of its current earnings. And, indeed, these earnings have continued most satisfactory and, although somewhat reduced, are apparently much less subject to world depression than one might suppose. As M. Coty has said, "We are dealing in necessities." It may be some time before the price paid for the European properties will be justified in the light of 1930 valuations. But while the 1925 investor in Coty-American might wish that it had waited a while to buy the European concerns, he has really nothing to complain about. His original $3,700 plus $1,530 for additional stock (his share of the first payment for the European companies) had a value of $9,000 at the first of July, 1930. Meanwhile he may have the patriotic satisfaction of sharing in the creation of world business.

While a feeling of patriotism may have to suffice in lieu of cash until this foreign deal is permanently financed, the final settlement of Coty cash problems may be hastened through the exercise of options now held by bankers on the stock of the foreign subsidiaries. These options may become attractive in the near future if the history of Coty-American under American control is repeated in the case of its newly acquired European companies. The cash received by the companies from the bankers who thus exercise their options to buy stock would hasten the resumption of dividends for Coty-American stockholders.

Almost all the foreign earnings of Coty are made by the French company. This means that what Coty-American bought was French earnings plus the right of extending for its own benefit Coty goodwill and reputation all over Europe and South America. Coty-Americanization of the foreign plants would seem to be in order from Mr. Levy and his able collaborator, Joseph Francis Scanlan. But whatever their plans, they indubitably intend to make Coty-American stockholders rejoice again.

And manifestly this is also greatly satisfying to Mr. Levy. When he is in New York, he may be found, if at all, in a sunny office adjoining a quiet, austere reception hall decorated with perfume bottles in show cases. Mr. Levy is reputed to have been born in the shadow of the great Cathedral of Rheims, but there is nothing Gothic about him. A great, bulging, swarthy man, he is unmistakably a Mediterranean, the gracious, witty, but inscrutable bashaw of a cosmetic empire. He invariably has flowers in his office and a flower in the lapel of his capacious, ill-fitting suit. His politeness verges toward the mechanical, but always remains on the side of charm. He has obviously eaten well and with relish. Doubtless he will shortly do so again. But this, like all information about Mr. Levy's private life and private business, is supposititious. He is a driving, relentless business man; the profession testifies to that. But he dislikes direct questions as to his private doings. One hears that his father, a manufacturer of powder puffs, once undertook to make and market a line of perfumes not unlike that which his son is now engaged in selling to the tune of millions. The scheme failed. Had it been entrusted to Levy Jr., its history would almost certainly have been otherwise.

Coty owns the Marie Earle Salons which give the same style of expensive, personal beauty treatment as Elizabeth Arden and Helena Rubinstein. Coty perfumes are inexpensive, but those made by the Coty subsidiary, Rallet, and largely sold under the names of famous couturiers, are of the first expense rank and are unsurpassed in the esteem of smart women. A famous couturier's perfume made by Rallet and sold for $12 an ounce is merely a more persistent version of Coty's newest fragrance, *L'Aimant*, which sells for $5 an ounce.

Offering everything cosmetically, and perfumes besides, Coty has few competitors in a strictly business sense. There is Houbigant, which, although it has an eleven-story building in New York, still has its main office in France. Its line is extensive, its prices moderate, its distribution great, its *Quelques Fleurs* one of the oldest and most popular of perfumes. And there is the American house of Hudnut, now owned by two gentlemen named Pfeiffer, with three of its factories in New York, Toronto, and Paris respectively turning out a tremendous line of low-priced cosmetics and scents, *Le Début* and *Du Barry* among others.

Courtesy of Houbigant

UNDER M. FERNAND JAVAL, THE VENERABLE HOUSE OF HOUBIGANT CARRIES ON, RIVALING THE GREAT COTY

Tony Van Horn

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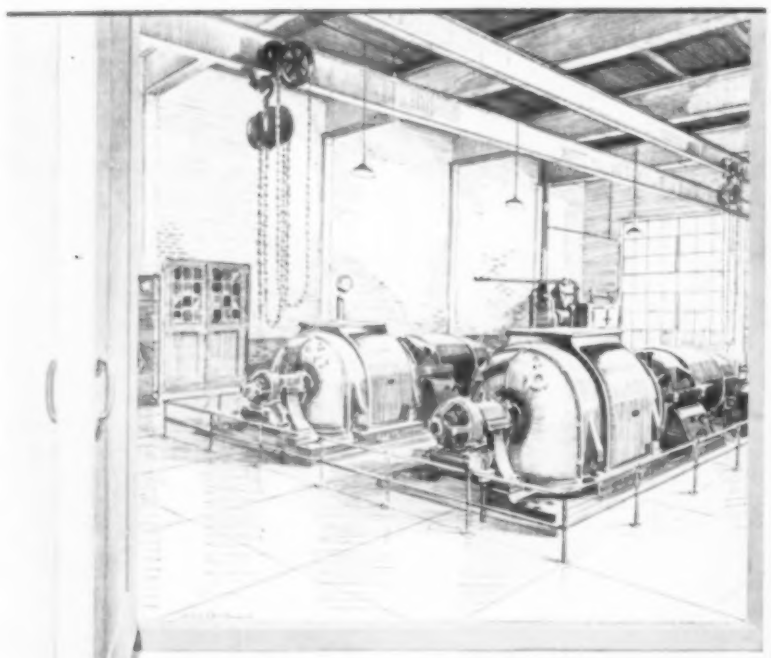

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Engineers

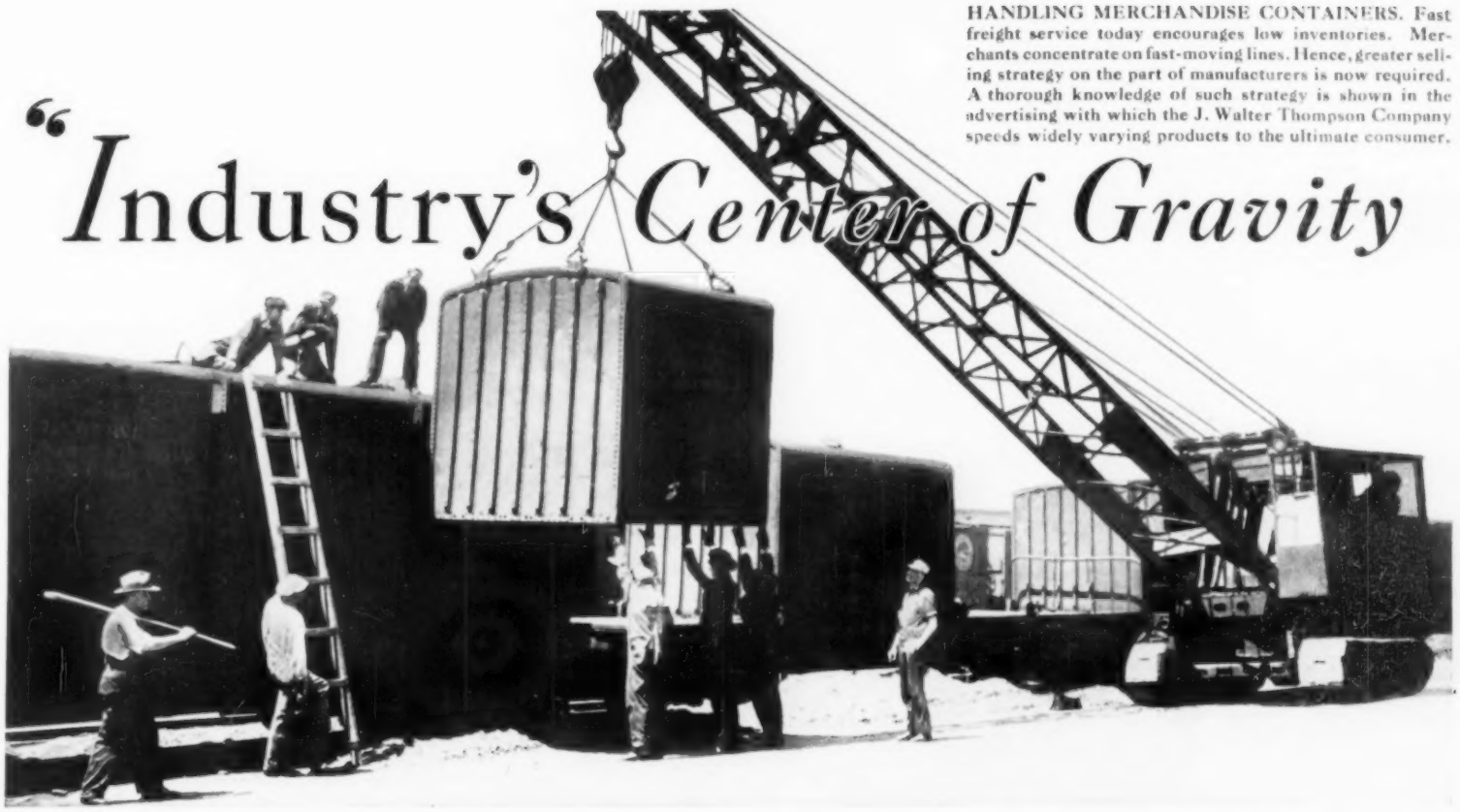
Greenville South Carolina

As a big cosmetic house, perfume or no perfume, Coty naturally competes with other large scale cosmeticists who have never bothered much with scents. Amiran of New York and Paris sells beautifying materials which are advertised as having been made according to the formulas of the Russian imperial family, as provided by Grand Duchess Marie. They are costly, as are those marketed in Paris by Lina Cavalieri, famous beauty, erstwhile singer and cinema actress. In direct contrast to these orchidaceous ventures is The Armand Company, Inc., of Des Moines, Iowa, which began with a fifty-cent face powder and still sells it, together with a full cosmetic line, through some 40,000 retailers in the United States and Europe. Hundreds of these retailers know Carl Weeks, president of Armand, personally. The son of an Iowa farmer and now the father of four sons, he lives on a bluff in Des Moines in a great house filled with imported bibelots. He wears gaudy shirts, is hale and friendly, and one of the most popular figures in the beauty business. Mr. Weeks' organization puts on very little dog, but it sells lots of good cosmetics at anybody's prices. Another jovial cosmeticist who does about the same is Joseph J. Quinn, American vice president of the French house of Pinaud, indelibly associated in the American mind with the finger-flicking Gallic barber of the car cards. The house of Pinaud is 150 years old and is owned by George and Henry Klotz of Paris, but it is Mr. Quinn who, by endeavors analogous to those of Coty's Mr. Levy, has energized the business. Pinaud sells all sorts of preparations, but is now stressing a single cream which supposedly fulfills all the functions of the various creams involved in such a facial regimen as that of Arden. Thus do one firm's profitable complexities stimulate another's profitable simplicities. Neither Armand nor Pinaud operates beauty salons.

But if Coty has few competitors as a big cosmetic and perfume house, it has plenty of rival *parfumeurs*. Face powders, cold creams, and so forth are all more or less alike. Their manufacturers can only be compared commercially. But we have already alluded to perfumery as an art, and we should do that art no more justice if we limited our discussion to Coty than we should the art of music if we talked only of Tschaikowsky. Among the oldest houses in Paris is Guerlain, where the Prince of Wales trades ("He never fails to carry away a 'pink package' of rather large proportions"), and where his illustrious grandfather's baptismal scents were prepared. Guerlain buys half of the 400 pounds of perfect jasmine flowers grown each year, markets in France only through the leading hairdresser in each city. Its famous *L'Heure Bleu* retails for $5 an ounce; its *Shalimar* costs $25 for two and one-half ounces. The House of Guerlain is 102 years old and is now in charge of the fourth Guerlain generation. Caron is only twenty-five years old, yet in that time it has produced two famous fragrances, enough for any one establishment. *Narcisse Noir*, heavy, musk-laden, leaped to popularity almost literally over night when Gloria Swanson used its flower-shaped bottle in a love scene. Caron's *Nuit de Noel*, one of the great bouquet perfumes, retails for about $15 an ounce.

Ybry makes the heaviest, most oriental and costliest scents (a sample of their newest, *Palo Alto*, at $33 an ounce, they plan to send to Mrs. Hoover), and Yardley is the outstanding English cosmetic and perfumery house, featuring floral *odeurs* and creams, soaps and powders tinctured with English lavender. Corday (*Toujours Moi*, *Orchidée Bleue*), Lenthéric (a Squibb interest enjoying smart favor), and Roger & Gallet (*Pavots d'Argent* and some 163 other odors) are all reputable perfumers. Nips is a clever firm which buys Coty and Houbigant perfumes in bulk at wholesale prices, then rebottles them in tiny flacons (enough scent in each for one application) and sells them in vending machines and

P. & A.
ELECTRIC REJUVENATING: ONE OF BEAUTY'S MASKS



HANDLING MERCHANDISE CONTAINERS. Fast freight service today encourages low inventories. Merchants concentrate on fast-moving lines. Hence, greater selling strategy on the part of manufacturers is now required. A thorough knowledge of such strategy is shown in the advertising with which the J. Walter Thompson Company speeds widely varying products to the ultimate consumer.

"Industry's Center of Gravity is shifting from the Factory to the Store"

says HARRY E. WARD

HARRY E. WARD, *President of the* IRVING TRUST COMPANY

"A BROAD view of the industrial problem," he continues, "can regard production as complete only when the product has reached its final destination. Industry has mastered straight-line production within the factory. The next task of its leaders is to extend that straight line to the ultimate consumer. Business increasingly requires managerial talent with a creative grasp of distribution."

* * *

Mr. Ward's statement summarizes conditions with which the J. Walter Thompson Company has been in intimate daily contact for many years. This company has had the experience of working with business executives of the type Mr. Ward describes.

Collaborating with them in charting, following and sometimes in changing the complex channels of distribution, the J. Walter Thompson Company has served as advisor in the planning and execution of market strategy as it bears upon the ultimate consumer.

There are less than 9,000 packaged items in this modern drug store. An old-fashioned competitor nearby carries more than 14,000. Neither sentiment nor special attention sways this up-to-date storekeeper. He carries 25 lines that give him less than 20% profit. He has recently refused to handle 30 that offer him more than 100%; yet he does three times the business of his competitor. His customers determine his stock. The J. Walter Thompson Company has been notably successful in influencing the purchases of his customers.

In the course of this work, the J. Walter Thompson Company has not only acquired a wide fund of experience, but has also assembled a staff alert to the latest developments in the various specialized fields of modern merchandising.

Helped by this collaboration, many leading enterprises have maintained their position in existing markets and have penetrated new ones. The stabilizing influence thus secured has enabled them so to coördinate production and distribution that the two have in many cases become a single continuous process.

In this way the J. Walter Thompson Company is contributing its share to the solution of one of the most important problems which faces American business today.

Two folders, entitled "Selling at Home," and "Selling Abroad," have been prepared to show the scope of the service of the J. Walter Thompson Company.

These folders will be gladly sent to executives interested. Write to the New York Office.

J. Walter Thompson Company

New York • Graybar Building • 420 Lexington Avenue

Chicago, Boston, Cincinnati, San Francisco, Los Angeles • Montreal, Canada • London, Paris, Madrid, Berlin, Stockholm, Copenhagen, Antwerp, Warsaw • Alexandria, Egypt; Port Elizabeth, South Africa • Buenos Aires, Argentine; Sao Paolo, Brazil • Bombay, India • Sydney, Melbourne, Australia • Batavia, Java.

WE solicit conservative margin accounts based on purchases of stocks listed on the New York Stock Exchange. Our facilities, resources, and experience, developed through forty-one years of service to traders and investors, are placed at the disposal of individuals having satisfactory banking sponsorship.

HORNBLOWER & WEEKS

ESTABLISHED 1888

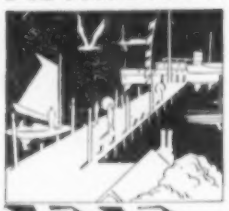
BOSTON NEW YORK CHICAGO CLEVELAND
DETROIT PROVIDENCE PORTLAND, ME. PITTSBURGH

Members of the New York, Boston, Chicago, Cleveland, Pittsburgh and Detroit Stock Exchanges and the New York Curb Exchange

Hackercraft . . .

Will Well Repay Your *Faith* in a *Fine* Product

DISTINCTION



Hackercraft cost more than the average boat by a very slight margin—but the quality and craftsmanship associated with a staunch, luxurious boat will well repay your faith and shrewd appraisal of a fine product. Let one of these handsome Hackercraft hulls snap you from the dog days of hot summer into the cool invigorating pleasures awaiting you afloat. Reel off the miles of lake shore or coastline with the contented purr of a Kermath or Gray marine engine to provide further proof of integrity of performance. Speeds up to 50 miles per hour await your touch to the driving controls. Four models in 24, 26, 30 and 38 foot sizes are built to gladden the eye and thrill the heart of any yachtsman. A catalog illustrated with actual action pictures of Hackercraft will be mailed on request. Ask about the new Hackercraft Custom Boat Department on special designs and custom models.

HACKER BOAT COMPANY

548 River Drive Mt. Clemens, Mich.

HACKERCRAFT

AMERICA'S FASTEST SPEED BOATS

ten-cent stores. A dime buys four Nips; millions are made each year. There is no business connection with either Coty or Houbigant. Peculiarly enough, Nips will no longer bottle the heavily pedigreed Caron and Guerlain scents because there is more demand for the less pedigreed Coty and Houbigant. At the other end of the perfume scale from the slot-machine Nips are the perfumes of suave, great-domed Prince Georges Matchabelli, Russian exile and former Georgian minister to Rome. No better example can be given of the so-called "class appeal" for the so-called "snob sale." Having studied chemistry in Berlin, it is related that Prince Matchabelli sought a way out of his post-revolutionary penury by mixing perfumes in a cellar bathtub on Madison Avenue, New York City. His *Princess Norena, Duchess of York, Empress of India, Royal Gardenia, Ave Maria* and other scents, appearing in ornate bottles shaped like the crowns on the Matchabelli crest or in shining crystal pyramids, are now obtainable at about $10 an ounce in about eighty stores throughout the United States, each of which has been socially approved by the Prince. In the magazine *Modern Packaging* he has blandly admitted: "The whole secret of selling expensive perfumes is to suggest by their packages luxury and exclusiveness. This we have done through the use of bottles of unusual shape, decorated in color, boxes covered with gold and silver papers and lined with velvet, and the constant use of the coronet as a trade-mark."

General Motors of Games: Spalding

[*Continued from page 66*]

is approximately $100; colleges with less ample athletic treasuries may reduce the cost to about $75, and high schools go down to about $40. Here, for example, are the necessary items in the wardrobe of a Harvard, Yale, Princeton, Notre Dame, Pittsburgh, Stanford, or other Class A football man:

1 headguard	$8.00
1 practice jersey. . . .	7.00
1 game jersey	8.75
1 pair practice pants . .	6.75
1 " game pants . . .	7.50
1 " hip and kidney pads	7.50
1 " knee pads . . .	4.00
1 " shoulder pads . .	9.50
1 " practice shoes . .	11.85
1 " game shoes . . .	13.85
6 supporters	2.00
6 pairs socks	3.00
2 " practice hose . .	3.00
1 pair game hose . . .	1.50
1 side line pull over. . .	9.00
	$103.20

Considering that nearly every high school and college maintains teams in at least football, baseball, basketball, and track, and that Spalding relations with coaches and athletic managers the country over are extremely close, the Spalding institutional business is perhaps the bulwark of its prosperity. So professional, indeed, has been the Spalding relationship to sport that by comparison its cultivation of the general public has been, if not neglected, at least not nearly as strongly stressed. Within the last few years, however, the company has become much more interested in its string of retail outlets, and is also spending (with Young & Rubicam, able Manhattan advertising agency) some $600,000 a year. No sales shrinkage has been noticed by Spalding during the first half of the current year, depressed as that period has been in more basic industries. It is one of the odd factors in a depression, indeed, that the luxury with the low unit price seems to prosper rather than to decline; thus "entertainment" stocks for a long time were leaders in the sagging stock market and thus baseball attendance figures are running considerably ahead of their totals for 1929. Spalding appears to be, on the whole, an extremely prosperous organization. It holds the commanding position in its industry, and that industry itself is stable and assured. The future of Spalding would appear to be the future of sport. For rare is the manufacturer who has made with his market a union so binding, so permanent, so complete.

THE RETAILER RENEWS A QUAINT OLD CUSTOM . . .

WHEN Grandpa Robinson ran his general store, fifty years ago, he made it a point to know all the families that dealt with him. He had a cheery "Good morning" and a welcoming handshake for every customer or prospective customer who came inside the door. • The present head of the great Robinson store has 30,000 charge accounts and his annual sales amount to several million dollars. But the factor of good-will that built the business is just as potent as it ever was. That is why he writes a *personal letter* to every patron of the store at least once or twice a year. To the army of people who receive these letters "Bill" Robinson is not just a name but a person—known and trusted. • More and more retail establishments that have outgrown the possibility of flesh-and-blood contact between president and patron are using *executive letters* to bridge the gap. These letters are *personal* in every sense—typewritten and hand-signed on the stationery of the President's Office. In order that there may be no possibility of mistaking them for ordinary "form" letters, leading firms choose Coupon Bond as the flawless background for these messages of good-will. • Coupon Bond has established a national reputation as a business paper of supreme quality. Because it is made entirely of clean, new rags, it has a strength and beauty that no paper of inferior grade can possess. • On request we will gladly send you our portfolio, "The Modern Trend in Letterheads," as well as a new booklet, "The Executive Letter," which outlines the uses of this effective business tool. (In writing for them please use your business stationery.) • *Coupon Bond is but one paper in the Eagle-A Line of Bonds, Ledgers, Writings, Index Bristols, Offsets, Covers, Book Papers, Mimeograph and Manifold Papers—the* right *paper for every business purpose.*

AMERICAN WRITING PAPER COMPANY, INCORPORATED
HOLYOKE, MASSACHUSETTS

EAGLE·A·PAPERS

A
Personal Invitation
to
Hotel Hollenden

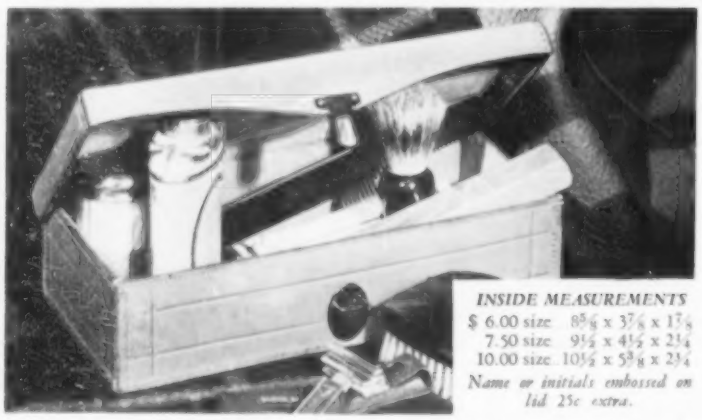
THE Hotel Hollenden is ideally located for the convenience of the visitor whether he is in Cleveland on business or pleasure. Within a block or two of the Hollenden will be found the leaders in practically every activity of the city. Just a block or two away are the theatres, the shopping centers, the banks, the Public Auditorium and the principal office buildings. Located right in the heart of things, the Hollenden has for decades served the requirements of the most discriminating visitors. Anything that is required of a good hotel may be found at the Hollenden. You are cordially invited to make the Hollenden your home when you are away from home. The Crystal Dining Room and the Hollenden Coffee Shop offer a variety of good eating places.

Sincerely yours,

Vice Pres. & Gen. Mgr.

In Cleveland-it's The
HOLLENDEN
THEO. DE WITT,
Vice Pres. and Gen. Mgr.

New Idea in **TOILET KITS**



INSIDE MEASUREMENTS
$ 6.00 size 8⅝ x 3⅞ x 1⅞
7.50 size 9½ x 4½ x 2¼
10.00 size 10½ x 5⅜ x 2¾
Name or initials embossed on lid 25c extra.

A simple solid leather case
No loops . . . No gadgets . . .
No monkey business!

Just *toss* your toilet articles into this handsome solid-leather case . . . and there you are! No time lost in fussing with trick loops. No lengthy roll to take double space in crowded washrooms.

Made of extra thick solid leather, of the same superb quality which made Hamley Cowboy Saddles famous. Oak bark tanned—a long slow process that ripens the fibers and makes them improve with age.* A beautiful russet color which takes on a rich dark glow with passing years.

At exclusive shops, or postpaid direct from HAMLEY & COMPANY, *Saddlemakers since 1883*, 370 Court Street, Pendleton, Oregon.

*Every Hamley Kit has the Hamley Cowboy Saddle tooled on the bottom. Be sure you get the genuine Hamley Kit, made of Hamley quality leather, by insisting that this mark appear on the kit you buy.

The **HAMLEY KIT**
MADE LIKE A FINE COWBOY SADDLE OF GENUINE *Solid Leather*

The Turksib Is an Asiatic Monster

[*Continued from page 49*]

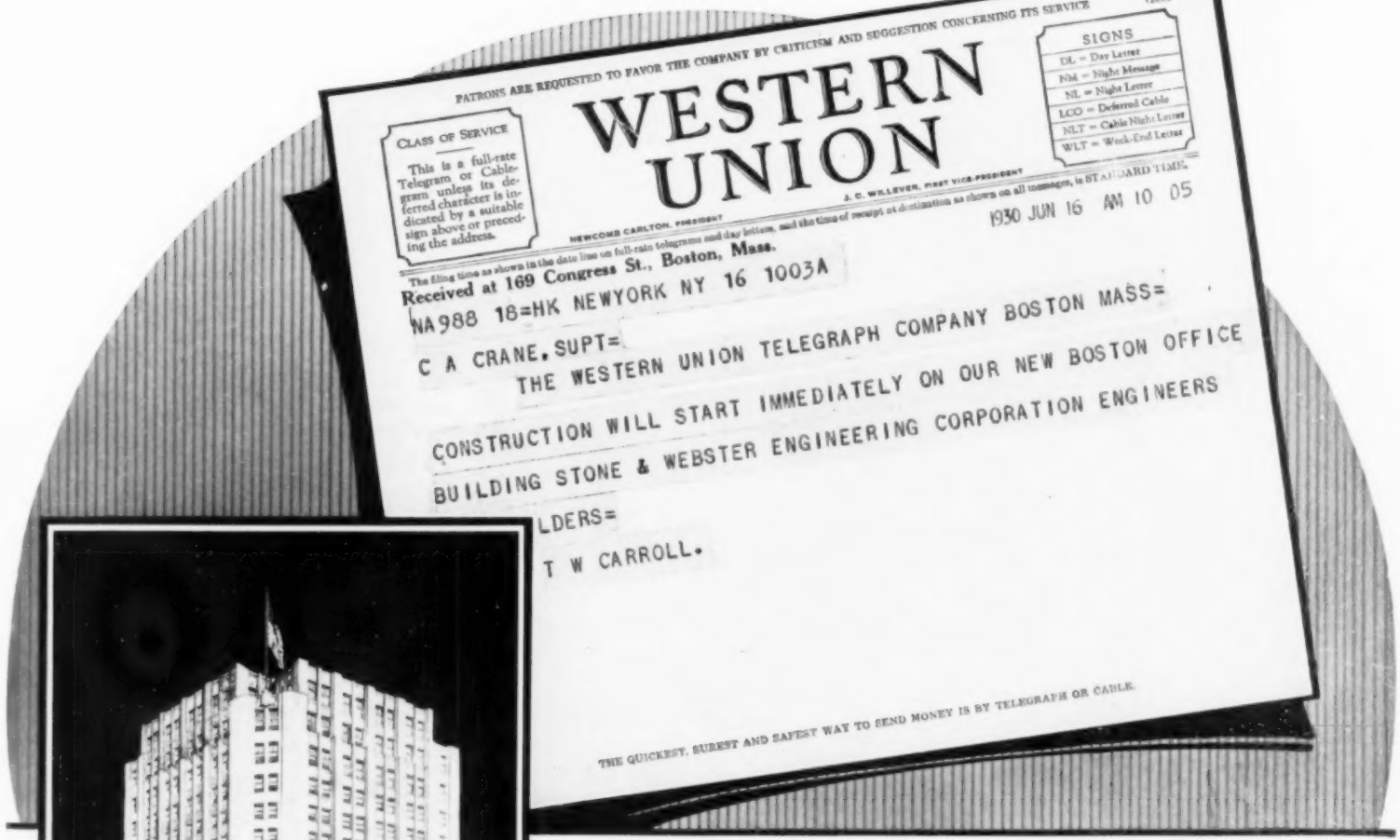
Cotton is the keynote of the Turksib, but there are other things that interest the Soviet. In Turkestan is a big part of the State's copper, zinc, and lead reserves. At the northern end of the Turksib is the Kuznetsk Basin, one of the biggest potential iron and coal districts in the Soviet Union. Turkestan and the steppes to the north have been cattle and sheep countries since the beginning of time. At one of the market towns government agents buy from 10,000 to 15,000 head of cattle daily. Much of the dried fruit eaten in Russia comes from Turkestan. Alma Ata, "Father of Apples," is the center of a large apple and grape district. The road opens up some 27,000,000 acres of virgin timberland, most of it up in the north. Rice grows so well along the southern line of the Turksib that the State Rice Trust has taken up huge acreages of land, so much, in fact, that the railroad has to fight for land for its shops and stations.

Our own Interstate Commerce Commission looks unfavorably on rail projects that threaten to change "existing routes and channels of trade." Not so the Soviet, or the Turksib would never have been built. It has disrupted the trade routes of all Central Asia. A most welcome disruption, however. Before its coming, trade between Tashkent, the chief city of Turkestan, and Novosibirsk, the capital of Siberia, had to take a hopelessly roundabout route by way of Samara (see map). A carload of raisins from vineyards of Turkestan had to travel over 2,500 miles to reach Novosibirsk. The Turksib cuts through a direct route between the two cities that is just half as long. More important, it has added the missing third side to a triangle of trade. Before this addition all trade between Turkestan and Siberia was carried on through a junction point many hundred miles west of both. The Turksib sets in motion a flow of trade between *three* points, instead of a mere exchange between two. Thus Siberia is able to send timber to Turkestan (via Turksib) to pay for cotton which Turkestan sends up to Russia (via Orenburg-Tashkent) to pay for textiles which Russia sends to Siberia (via Trans-Siberian).

When the Orenburg-Tashkent line was built in 1905, Europe, and especially England, trembled. Statesmen had nightmares of men and guns rumbling down from Moscow into the very heart of Turkestan, within a few hundred miles of the Indian border. The road was quite important economically, but it was vital strategically. It was built wholly by work battalions under the command of General Anenkov. Its station masters and other petty officials were old soldiers almost to a man. The Turksib, though its chief significance is economic, is not without strategic importance. For nearly its entire length it runs closely parallel to the borders of China and Mongolia. This latter is practically a Soviet protectorate, and China has long been a fertile field for Communist seed. The Turksib will stimulate Chinese-Russian trade, bind the two countries even closer together. A spur eastward into China itself is an obvious next move for the Soviet. Much as the Orenburg - Tashkent threatens Afghanistan and India, the Turksib threatens China.

"Bill Shatov, graduate of U. S. A."

Although the Turksib is one of the few Soviet industrial projects that has been carried through without any foreign, and especially American, technical advice, a great deal of the construction equipment was American. Chicago Pneumatic Tool, American Car & Foundry, Bucyrus-Erie, Marion Steam Shovel all profited from the building of the Turksib. And Bill Shatov himself, while Russian by birth, is as much an American product as a Marion steam shovel. He boasts that he is a graduate of "U. S. A., the greatest industrial college in the world," and, like Hoover, calls himself a "social engineer." For many years he led the life of a "Wobbly" in the United States, setting type one day on a New Jersey newspaper and hopping a freight for Montana and the wheat harvest the next. The bright Red intellectuals who attended the Ferrer School in New York used to listen to lectures by Bill Shatov, Clarence Darrow, Will Durant, and many another rebel. Perhaps Big Bill got his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BUILDING STONE & WEBSTER ENGINEERING CORPORATION ENGINEERS
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BUILDERS *and* ENGINEERS
For the
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Selected by Western Union for the twelfth time

Eleven principal construction contracts and six engineering reports have been completed by Stone & Webster Engineering Corporation for The Western Union Telegraph Company at home and abroad. The twelfth contract is for the client's Boston Office.

Over 79% of recent work is repeat business. Over 75% of our work, during the last 10 years, has been for concerns not connected in any way with Stone & Webster interests. We offer over a billion dollars of construction and engineering experience to those who demand speed, efficiency, and economy in building work.

STONE & WEBSTER ENGINEERING CORPORATION

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The Securities of Ohio Corporations

which include those of many companies that are vital factors in the great industrial structure of the United States, have attracted investment capital from probably every state in the Union.

We have maintained for years, in our Cleveland office, an Ohio Securities Department, devoted exclusively to Ohio securities, listed and unlisted, which is now being used by investors in all parts of the country. It is supplemented by offices in Cincinnati, Columbus, Toledo, Canton, Massillon and Akron, Ohio, private wire connections and memberships in the Cleveland, Cincinnati and Columbus Stock Exchanges. Through this department we offer a highly specialized service in Ohio Securities.

OTIS & CO.

Established 1899

NEW YORK CLEVELAND CHICAGO

Members New York and other leading Stock Exchanges

Bigelow, Kent, Willard and Company, Inc.

Consulting Engineers and Accountants— Merchandising Counselors

Maintaining a complete staff of engineers, accountants and research workers in the industrial field for the survey of product, process, distribution and of management.

A brochure containing the papers presented at the Third Annual Merchandising Conference recently conducted by Bigelow, Kent, Willard & Company, Inc. will be loaned to executives upon request.

PARK SQUARE BUILDING, BOSTON

executive experience and his power in handling men from the strikes he had a hand in organizing at one time or another.

Bill Shatov has a remarkable capacity for liquor. When he is drunk, he sings loudly. The most remarkable thing about his career in Russia during and since the revolution is that he has never joined the Communist Party. He is an anarchist—and an individualist—who submits to no authority, whether of capitalists or of proletarians. Though he is no Communist, he has held so many high posts in Soviet Russia that the tale wearies in the telling. In the hectic early days of the revolution he showed himself a remarkably able military commander. He it was who was for a time Chief of Police in Leningrad, who successfully defended the city against the "White Russians" under General Krasnov, and who organized those hard fighting troops known as "Shatov's Shock Battalions." In the later Soviet Russia that has beaten its field guns into tractors, Bill Shatov has revealed himself as an exceptionally able executive. He has been a pillar of the Oil Trust and of the Metal Collegium. One of his most notable economic exploits was his reorganization of the banks of the Caucasus. He started off by assembling the bankers and telling them that he knew something about banks because he once held up one. He is much interested in art and letters and has a standing order with his old friend, Michael Gold, editor of the *New Masses*, to keep him supplied with the latest books from the States. A recent consignment included Hemingway's *A Farewell to Arms*, the Beards' *The Rise of American Civilization*, Dos Passos' *42nd Parallel*, and Upton Sinclair's *Mountain City*.

Salt

[*Continued from page 52*]

so that plants can more easily assimilate it though an overdose of salt renders soil sterile and is about the only thing which will kill poison ivy, now so prevalent in the United States . . .

. . . By soap-makers to precipitate the liquid soap into solid form. Salt accomplishes this by forcing the water out of the fat and coagulating the albumen . . .

. . . By tanners to prevent putrefaction of the raw skins and to swell the cells and thus make the skins pliable . . .

. . . By paper-makers, as calcium hypochlorite (derived from chlorine, of which paper-makers use over 55 per cent of total U. S. production), to bleach the wood pulp . . .

. . . By textile manufacturers as a bleaching agent (as sodium hypochlorite) and (as tin tetrachloride) in weighting silk . . .

. . . By steel-makers as a flux. Salt lowers the fusion point of minerals, i.e., makes them more soluble . . .

. . . By refiners of oil, gold, silver, copper. Salt here, in general, acts as it does in soap-making: as a precipitating agent . . .

. . . By industrial chemists, one of whom has remarked, "Give a chemist coal, salt, water, lime, sulphur, and cellulose, and he can perform nearly all the modern miracles in chemistry."

Salt by land and sea

The first salt miners in this country were buffaloes. In many ways salt offers the world's simplest mining problems. Royal Crystal Salt makes money by the simple process of pumping water out of Utah's Great Salt Lake. The sun does the rest. For many centuries pickax and shovel were the main equipment in the celebrated salt mine at Wieliczka, Poland, first worked in 1000 A.D., and filled with grottoes and shrines hewn out of salt. Most contemporary salt mining, however, is a little beyond the grasp of even the brightest buffalo. Machinery has been introduced, much of it first appearing in International's great Retsof mine in upper New York State, which is pictured on page 53. Here operations are carried on with power drills, explosives, automatic hoists, and miles of railway tracks, much as in a coal mine. The chief difference is that salt mining is safe and even healthy, for the salt-laden air is good for colds and rheumatism.

Salt is either mined (in which case it is rock) or refined (in which case it is evaporated). Rock salt is industrial salt. Most evaporated salt is also industrial —chiefly in pickling, preserving foods; the remainder is table salt. In tonnage rock and evaporated are about equal; in annual value evaporated has a decided edge. Michigan, first in salt

[*Continued on page 109*]

"See here, Hartford—you're going too far!"

The Hartford is interfering with Fire's business—very seriously.

Until lately, Fire has always had the last word. Insurance met property loss, but there was always a yawning gap left open—the idle months while income producing property was being restored. Fire's deadly blight persisted, long after the insurance had paid for the property.

Business can't resume the day the insurance is paid. Income stops—profits stop—orders can't be filled. Expenses go on—contract salaries must be paid, taxes and interest met. And there's no income!

But that's past. Now the thoughtful business man arranges his fire insurance to step right in and *take the place of his business* while his property is being rebuilt. That's what Hartford *individualized insurance* does. It pays your loss during the idle months . . . in addition to replacing the property itself. If necessary, it pays your rent in temporary quarters during reconstruction.

The Hartford agent can arrange your fire insurance to keep your business income *safe* from Fire. Get him on the wire now*—and get out from under Fire's thumb!

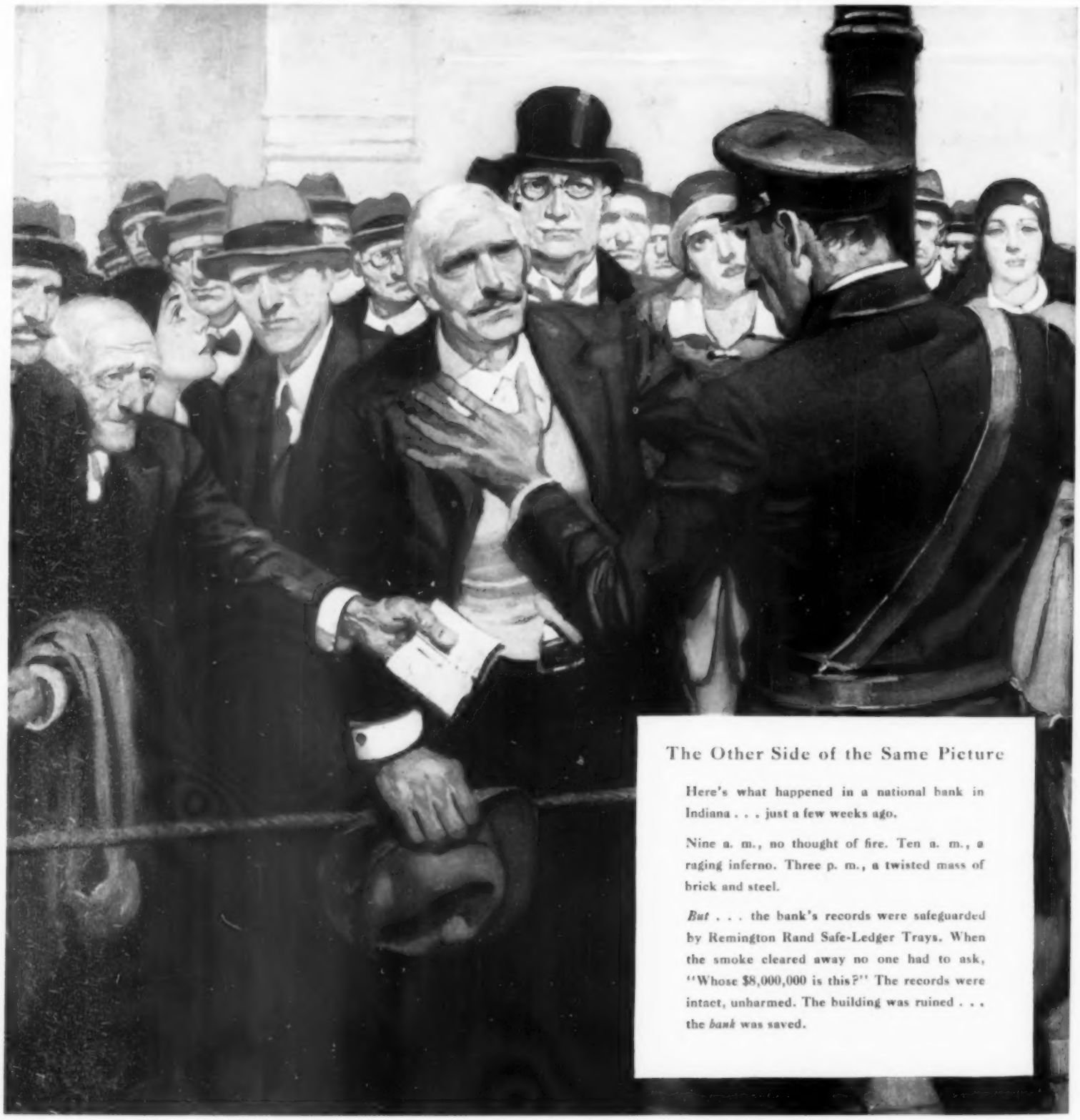
©H.F.I.CO.-30

THE **HARTFORD FIRE INSURANCE CO.**
AND THE **HARTFORD ACCIDENT AND INDEMNITY COMPANY**
WRITE PRACTICALLY EVERY FORM OF INSURANCE EXCEPT LIFE

*If you do not know the name of the Hartford agent look under "Hartford" in your telephone book. If he isn't listed write the Hartford Fire Insurance Co., Hartford, Conn.

THE EMANCIPATION OF THE AMERICAN BUSINESS MAN

"Whose $8,000,000



The Other Side of the Same Picture

Here's what happened in a national bank in Indiana . . . just a few weeks ago.

Nine a. m., no thought of fire. Ten a. m., a raging inferno. Three p. m., a twisted mass of brick and steel.

But . . . the bank's records were safeguarded by Remington Rand Safe-Ledger Trays. When the smoke cleared away no one had to ask, "Whose $8,000,000 is this?" The records were intact, unharmed. The building was ruined . . . the *bank* was saved.

THE EMANCIPATION OF THE AMERICAN BUSINESS MAN

is THIS . . ?"

Owners Please Identify!

IN THE *winter of 1913, when fire destroyed the offices of the leading savings bank in a Massachusetts town, every depositor's record was burned. Eight million dollars in currency and securities were salvaged next morning when the vault was opened. But not a soul in the bank knew to whom it belonged. Rumor of the bank's predicament quickly spread to the industrial quarter. By noon a threatening mob had formed. The bank's president, surrounded by a cordon of police, addressed his customers in reassuring tones. A temporary office was being opened. If depositors would bring in their pass books they would be accepted as sufficient proof of the bank's indebtedness. Every depositor was guaranteed his money. But the afternoon papers carried the headline, "$1,361,000 withdrawn in run on burned bank."*

. . .

TODAY no truly modern bank or business office depends on the inadequate office safe or vault, which at best can house only a few movable records. Now records of every description are fire-protected *where they are made and used.* No longer must they be *carried* to fire protection. Fire protection has been *carried to them.*

Today file cabinets are safes. Visible record cabinets are safes. Ledger trays and desks, housing modern records of account, are fire-resisting units in themselves. *Even the papers in your office desk* are safe-protected from fire's searching fingers.

In modern offices of every kind, when the closing whistle blows or the fire gong sounds, your clerks merely replace the individual records on which they were working, click an automatic-locking steel file drawer or cabinet door and every book, card or paper is sealed in behind fire-insulated walls.

. . .

WHAT has brought about this long-awaited protection to *all* the records of business? The formation of Remington Rand. For Remington Rand, by consolidating the leading makers in all branches of office equipment, pooled also their knowledge and experience. Made it possible for safe-construction experts to work shoulder-to-shoulder with office systems specialists, record experts, and the leading minds in machine accounting systems. Working "one for all, and all for one" they applied to every major record system the secret of fire-protection.

Thus Remington Rand is not only providing business with a single headquarters for the best office machinery and systems, but it is adding the refinements as well. The application of fire-protection to *all* business records is only one of many business miracles that are constantly emerging from Remington Rand laboratories. No matter what record-making or record-housing problem your business may be confronted with, the Remington Rand man can show you better business ways.

Having at his command the whole scope of Remington Rand products, he is not forced to advocate any particular device or method. His counsel is unprejudiced and unbiased. He is backed by the combined knowledge of all Remington Rand companies, and by the team-work of 4,000 other trained business advisers. Call him at any Remington Rand office. Use him as though he were a member of your own staff.

Remington Rand

BUSINESS SERVICE

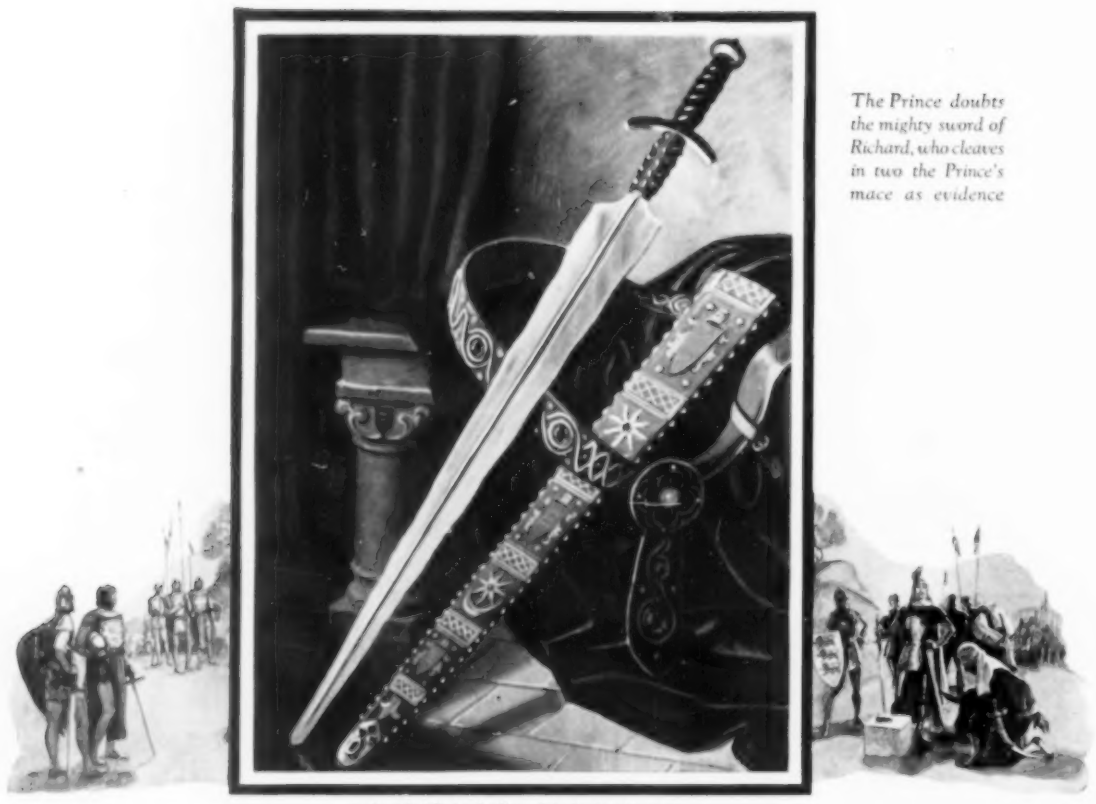
Executive offices, Buffalo, New York. Sales offices in all leading cities.

LIBRARY BUREAU *Filing Systems and Indexing Service* . . . SAFE-CABINET *Record Protection Devices* POWERS *Accounting Machines* . . . INDEX VISIBLE

RAND & KARDEX *Visible Records* . . . DALTON *Adding and Bookkeeping Machines* . . . KALAMAZOO AND BAKER-VAWTER *Loose Leaf Equipment*

REMINGTON *Typewriters and Accounting Machines*

THE GREAT EMANCIPATORS



The Prince doubts the mighty sword of Richard, who cleaves in two the Prince's mace as evidence

Sword of Richard. Painted by Ludwig Gassner

CUTTING COSTS *of Upkeep*

This famous sword, in the hands of Richard The Lion Heart, cut down resistance and brought him achievement and success in his crusades.

Today, in the experienced hands of Lyon craftsmen, steel is fashioned into storage and display equipment that materially cuts business costs—promotes efficiency and order—speeds up sales and service. These economies, immediately effective, are accumulative throughout the years. Upkeep costs and depreciation are negligible, for Lyon equipment is standardized, interchangeable and adjustable to changing conditions. Whatever your storage and display problems—whether you need shelving for stock room or tool room—lockers for club or school—cabinets for office or shop—and fixtures for your store—write for descriptive catalogs—today—you will find them suggestive of many profitable business improvements.

LYON

LYON METAL PRODUCTS, INCORPORATED
Converters of Sheet Steel into Practical Conveniences
AURORA, ILLINOIS
Branches, Jobbers and Dealers in All Principal Cities

STORAGE AND DISPLAY EQUIPMENT IN STEEL
STORE FIXTURES : COUNTERS AND SHOW CASES
SHELVING : LOCKERS AND CABINETS
FOLDING TABLES
AND CHAIRS

production, has many brine wells. New York, the runner-up, is rich in rock salt, so rich, in fact, that a quarter of the cost of the old Erie Canal was paid by salt taxes. International, with mines in both states, estimates that it has enough salt in sight, geologically speaking, to last a century at the present rate of mining.

There is enough salt in the world to last as long as the world does. The amount of salt dissolved in the seas and caked in the earth is a solemn thought. Last winter an explorer came back from the sun-baked desert interior of Australia with a tale of a vast salt lake bed. He estimated the salt in the northern part alone at 3,000,000,000 tons, a figure which takes on epic proportions when compared to the annual world consumption of about 21,000,000 tons. The 11,600 tons of salt in the Dead Sea would keep the world happy for many centuries. And this, of course, is a mere fraction of the salt in all the oceans. Not until Indian rebels have extracted 4,500,000 cubic *miles* of salt from the sea will they be embarrassed by lack of raw material.

A Note on Pepper

SALT is a mineral. Pepper is a vegetable. Practically all salt is domestic. Practically all pepper is imported. Salt is something one must eat in order to live. Pepper is a mere palate tickler. Salt is a commodity so unspeculative that it is dealt in on no exchange. Pepper is a commodity wholly distributed through brokers and whose futures are as exciting a gamble as any at Monte Carlo. "There is something holy about salt," once wrote Nathaniel Hawthorne. No one has thus spoken of pepper.

Pepper is a seed that comes from India and the Dutch East Indies. Practically, all pepper tastes the same, costs the same. The one distinction is between white and black pepper—though witty traders insist that even here the main difference is color.

One of the two links between pepper and salt is that both are used to preserve food. No refrigeration plus a tropical climate runs up the oriental consumption of pepper. Even in this country of ice boxes the meat packers buy carloads of white pepper to stuff into their sausages.

Downtown on lower Manhattan Island men in shirt sleeves, talking fast into telephones all day, determine how much Batavian farmers are to get for their pepper crop. A Manhattan spice broker is a smart trader, and he has need to be such. He and his fellows meet on no exchange floor. He does all his trading over the telephone, makes buying offers to importers, selling prices to consumers, "takes a position" in the futures market—all by phone. He gets no quotations. He must call up some one and make an offer if he wants to find out what pepper is "doing." And he must keep the current market for pepper and a hundred other spices entirely in his head, be ready to take a position on any one of them every time the phone rings.

Besides his daily perturbations, the spice broker goes through two major crises every year. These come in July, when the Dutch East Indian pepper crop is harvested, and in December, when the Indian crop comes into the market. In the last decade pepper prices have shot up and down a price range that begins at four and one-half cents a pound and extends to forty-three cents. When one considers that pepper is not infrequently bought and sold in carloads, that about 1,000 tons are consumed in the United States every month, one understands why the spice broker must be a shrewd trader. Yet pepper is comparatively tame alongside of certain other spices: cloves, for instance, have a speculative record that puts J. I. Case Co. in the Liberty Bond class.

Pepper is at present in a very strong technical position. Prices hover around twenty-one cents a pound, which is considerably firmer than most Far Eastern products—rubber, for instance. Reserve stocks are low everywhere: in London recently there was only a little over 1,000 tons on hand. And, to complete the satisfaction of pepper bulls, the monsoon season, which lasts until September, is cutting down shipments out of the Orient. Thus pepper's second, and last, similarity to salt is that it is a commodity untouched by the adversity that has fallen upon most commodities.

August here offers more than just a memory — however delightful — of links and lake and cool, pine-scented nights; it will give you a system genuinely reconditioned for the strain of Fall. For a complete description of the Nauheim Baths, the radio-active waters, the famous restorative treatments, address Mr. Wm. M. Leffingwell, President, Glen Springs, Watkins Glen, New York.

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THE AMERICAN NAUHEIM

The SAVOY-PLAZA New York

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Send for the descriptive booklets on Matthews Cruisers

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Designers and Builders of Boats of Distinction . . . Since 1890
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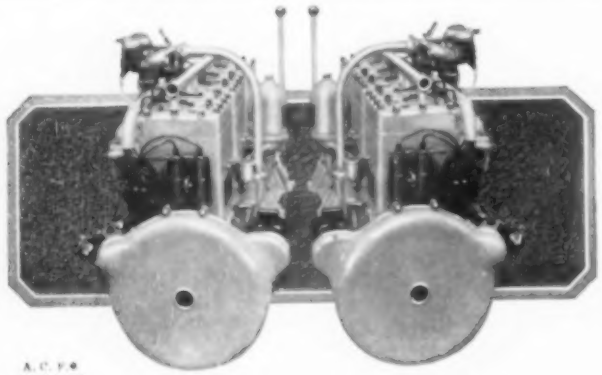

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Fifteen models—15 to 200 Horse Power
High speed and medium duty.

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SCRIPPS

• THE MOTOR THAT CROSSED THE ATLANTIC •

Temple of the Dollars, the Pounds

[Continued from page 71]

H. Patterson, who died in 1922, J. H. Barringer, the powerful, compelling general manager of today. Patterson equals the past, Barringer equals the future; while between the old and the new orders is the common bond of terrific sales pressure. Mr. Barringer, who had been a clerk in a hardware store in a near-by town at the age of twenty-five, came to N. C. R. as a clerk in 1907. In 1911 he became Patterson's personal assistant, with the responsibility of tracing the complicated Patterson orders through to their completion. Patterson was struck with him because he was one of the few whose own personality was, in its way, as dominating as the founder's. His ability to lead and organize men was unmistakable. The War threw the company into the red ink in 1914, and Patterson began looking for younger blood. In 1917 he chose Barringer, deposited the business in his hands. That year was the turning point in N. C. R. history—from it arises the modern N. C. R., something quite different from the Patterson N. C. R.—an organization as well adjusted to modern civilization as any in the land. Now Barringer is one of America's highest paid executives.

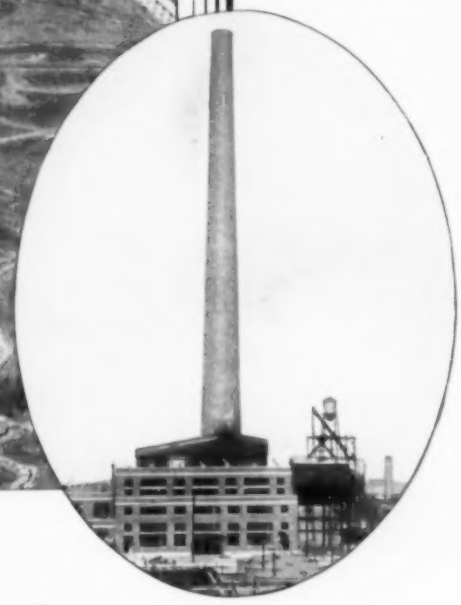
A great sign hangs in Mr. Barringer's office at Dayton: BIGGER OR BUST. It is dated 1927, and is signed by his chief executives and sales managers. General Manager Barringer has been known to rise from his desk, cross to a giant pad on an easel, and scribble with colored pencil: "$100,000,000 sales—$20,000,000 net profit." Smaller men would not dare such a goal, but this is Barringer's goal; the goal of Treasurer S. C. Allyn, a master of industrial finance; the goal of Salesman-in-Chief Charles E. Steffey; the goal of this modern N.C.R.

In considering a $100,000,000 objective, however, certain obstacles arise before the dispassionate observer. With one cash register in the United States for every 162 persons, the old question of the saturation point suggests itself, and is emphasized by N.C.R.'s earnings for 1929. In 1925 domestic sales were $31,600,000; in 1929, only $31,004,000. Domestic sales for the first quarter of this year are 22 per cent below sales for the same period in 1929. N.C.R. stock was floated at 50 in 1925. At one time the "A" shares sold in the one hundred and forties, but now they sell in the forties, below the original price. While the 1930 sales figures harmonize with a general business depression, it is difficult to understand what obstacle, other than saturation, has restricted N.C.R. domestic growth during the bull years of 1926-29. The average profits have been lower than the earnings of 1925 after adjusting them for the new employee deal, and in 1929 profits were greater by only about $450,000 on a gross business increased by more than $10,000,000 over 1925. The pause cannot be due to competition, because Patterson himself put all the old romantic rivals out of business. Remington has made progress with an excellent machine, but does only about 10 per cent of the business. N. C. R.'s most dangerous competitor is its own long lived second-hand machine.

To this difficulty the Barringer organization—the modern Cash—has two sound answers. It points first to foreign sales, which accounted for only about one-third of the foreign business in 1926; half in 1929; 55 per cent during the first five months of this year. In nations doing a brisk retail trade whose retailers are just being educated up to N.C.R.'s idea of the cash drawer, the field is naturally enormous. Sales in England have increased 41 per cent for the first five months of 1930 over the same period in 1929. The Soviet Government, which operates 85,000 stores, now has an order with N.C.R. for 100 machines to be tried out. It is impossible to estimate where this kind of expansion may end.

The growth in England has been due to the installation in English banks of the new posting machines, and at this point enters the second bigger-or-bust answer to the spectre of saturation. The Cash spends more than $300,000 a year in research for new machines, and it is the boast of the present management that within a reasonable time every cash register now in operation will be obsolete. To back up this state-

BULK STORAGE PLANT
Staten Island, New York



POWER PLANT
Port Arthur, Texas

Building two plants for the Gulf Refining Company . . .

A 1,920,000 barrel oil storage plant on Staten Island, and a power plant at Port Arthur, Texas, built simultaneously in fast time.

TO SERVE the New York Market, the Gulf Refining Company required a new storage plant on Staten Island. At the same time a large new power plant was needed at the refinery at Port Arthur, Texas.

We were called in to design and build both plants at the same time.

The storage plant on Staten Island has a capacity of 1,920,000 barrels, occupies 110 acres, and includes twenty-four 80,000 barrel oil tanks, steam plant, two drainage pumping stations, oil pumping station, fire pump and substation, dock for oil tankers, 9 miles of oil pipe mains, 18 miles of foamite pipe, 8 miles of steam pipe, 4 miles of levees, 3 miles of streets and roads, 4 miles of water mains, 2 miles of electric pole lines.

We did all this work in 6 months' time.

The power plant at Port Arthur, designed to utilize refinery waste products—sludge oil and pulverized paraffin petroleum coke—contains 3 boilers of 15,400 sq. ft. each and a turbine of 10,000 kw. capacity. It was also built in six months.

At Staten Island we have been called back to build large additions which are now under construction.

We are prepared to serve industrial companies in the design and construction of storage plants, factories, chemical plants, power plants, or work of almost any nature.

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An Investment in Health and Pleasure!

THIS summer make a real investment in health and pleasure—buy a Cruisabout and go out on wide, blue water away from the crowds and the dust, dirt and din of the city.

The Cruisabout is more than just a boat. It is a complete, compact, mobile summer home on which you can go when and where you choose.

For $3585, much less than the cost of a small summer cottage, you can own a Cruisabout. See the Cruisabout display at Bruns-Kimball & Co., 5th Ave. & 15th St., New York City or write for Booklet "N".

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Parachutes and Insurance Policies

BOTH parachutes and insurance policies are emergency propositions—to bring you safely to earth when disaster comes. Considering their vital missions, you want to know that each will function promptly and properly when emergency arrives.

Since 1876 CENTRAL policies have functioned properly in unquestioned quality of protection. They function promptly in immediate payment of losses. It means something also to the careful buyer that CENTRAL'S dividend (30% since 1921) actually cuts almost one-third from insurance cost.

CENTRAL policies are written through local agents. Full information, with name of nearest representative, on request.

CHECKS MAILED SAME DAY PROOF OF LOSS RECEIVED

Organized 1876 The CENTRAL A Friendly Company
MANUFACTURERS MUTUAL INSURANCE COMPANY
VAN WERT OHIO

Fire, Automobile and Tornado Insurance for Select Risks

ment Mr. Barringer points to the "Two Thousand," N.C.R.'s star performer, which was brought out of the laboratory a year before John Henry Patterson's death, but which is really the product of the new Daytonian order. As the screw propeller was to the steamship, so is the Two Thousand to N.C.R. Into it went $6,500,000 in engineering and research; it answered for half the total business in 1929 and is expected to do more than half in 1930. It has as many as nine cash drawers, one for each clerk, who is thus made entirely responsible for his sales, since he must balance his drawer before leaving the store at night. Each drawer has a different bell; it is impossible for one clerk to open another's drawer without announcing the fact in high jangling treble or deep iron bass.

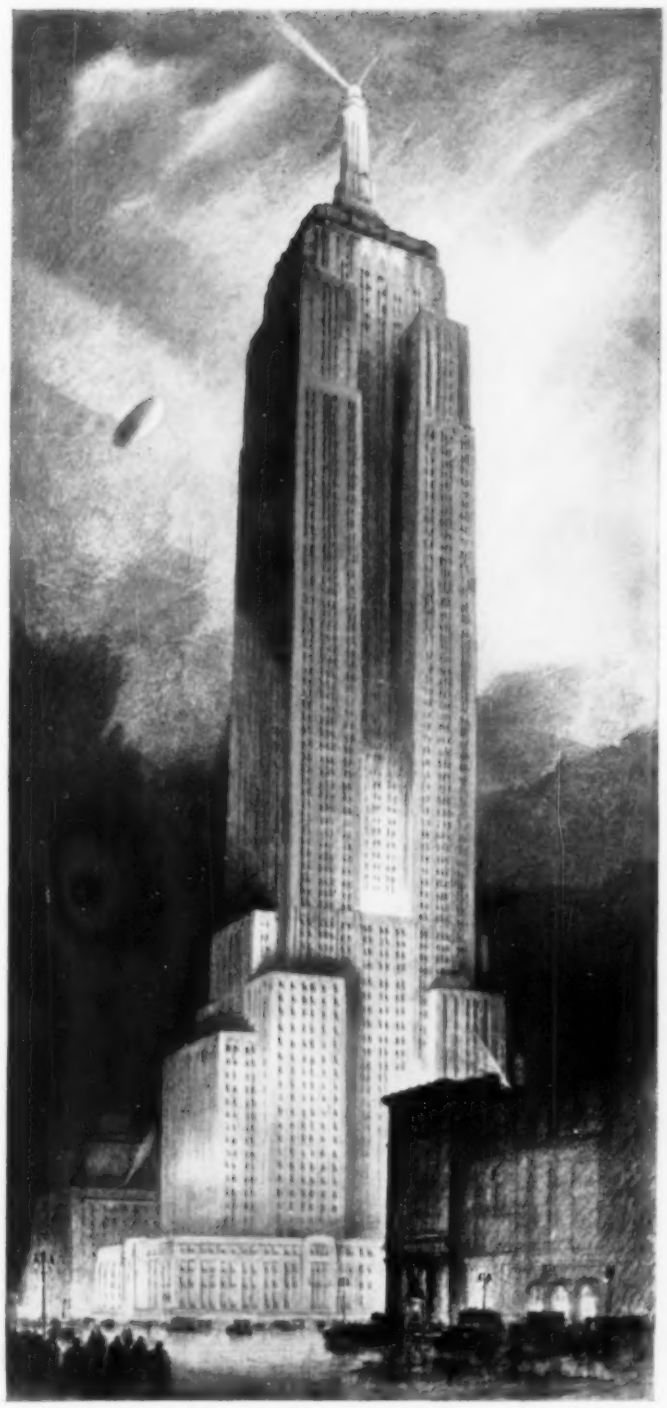
So popular are Two Thousands and their numerous modifications with John Wanamaker, Marshall Field, Gimbel Bros., and their brethren, that department stores have become N.C.R.'s star customers and represent 12 per cent of gross. Banks are fourth on the list of N.C.R. customers, representing 7.3 per cent of sales; and at this point, exit the shade of the old brass-bellied register, set like a policeman on the fly-specked counter of a Quick Lunch: enter the new, almost infinitely complicated Barringer machines. From the retailer's Two Thousand has been born the banker's Two Thousand, aristocrat of cash. One operation on such a machine prints a deposit, a withdrawal, or an interest credit on the journal sheet (within the machine), on the ledger card (inserted into the machine by the operator), and on the customer's pass book—simultaneously. About 90 per cent of the savings banks in Greater New York use the Two Thousand, and similar machines are used for posting by installment houses. A still more advanced machine called the Three Thousand has recently invaded commercial banks; but is not strictly a cash register, being a combination adding machine and typewriter, manufactured by Ellis Adding-Typewriter Co., Newark, New Jersey, a subsidiary of N.C.R., purchased last year for $4,000,000 cash and 30,000 shares of common stock, which had a market value of over $3,000,000. Preparing to market these accounting machines Mr. Barringer has organized, on N.C.R. high pressure lines, an entirely separate sales force—an army which was encamped in tents around the Dayton factory last month.

To answer the threat of saturation, to give the world, if possible, a whole new set of cash registers—the modern N.C.R. has not stopped here. It has recently placed on the market the Seven Thousand which makes new prospects out of thousands of owners of the old simple cash register. A new check writer has just come to the market. It has yet to market a number of new machines developed by its own engineers in cooperation with a department called "Future Demands." Among these unborn wonders are a machine for the use of public utility corporations, a machine to print railroad tickets on the spot and as called for, a machine for mailing houses which will turn out mail-permit slips with glue on the back of them, to be pasted on packages instead of stamps. N.C.R awaits government approval for this last item, the advantage of which is that a record of the stamps, a record of the shipment, a record of the sale, and a record of the mailing-clerk are all made at the same time. The railroad ticket machine is based upon a smaller one now being used on bus lines.

And certainly it may be said that, if the present N.C.R. captains can duplicate with future machines the success of the Two Thousand, there is no telling where The Cash will end. For the planet which N.C.R. has chosen for its field is large. Yet however far it goes, and however brilliant its destiny, the future of this company is peculiarly bound up with its past.

For at Dayton John Henry Patterson is immortal. As in one of the N. C. R. buildings there are 2,900 machines, each representing a step forward in cash register invention (many of them never marketed), so, in the memory of Dayton, Mr. Patterson's fads and fancies are still adrift. Hung on the walls, suspended on the hall ceilings, painted on the buildings of N. C. R., quotations survive by the thousand, sayings by every one from Mr. Patterson through Emerson and Lincoln to Shakespeare himself. He expected his people to follow these things literally. "Enthusiasm is the biggest asset in business" meant just that. Nothing else.

[*Continued on page 116*]



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JAMESTOWN, N. Y.
With offices in all principal cities

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A Partner's Obligations

EACH partner owes to his associate the assurance that business can be continued indefinitely, unhampered by lack of working capital or credit. The death of either is a contingency that would bring up this question. At the same time, he owes it to his dependents that, in case of his death, their interest in the business can be liquidated, as required by law, without bother or loss.

Unless the business has a large fund of ready money at that time, these dual obligations conflict. May we tell you how Business Life Insurance can be used in such cases for the benefit of all concerned? Address:

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"The Story of Modern Lacquer" is the title of a booklet that contains information most executives should have. You can read it in five minutes. It may suggest a way to save time and storage space; to make your product more salable by improving its appearance, by making it or its container waterproof, more resistant to abrasion, and by making it easy to wash and clean. ¶ We will gladly send you a copy of this booklet upon request. > > >

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(INCORPORATED)

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Cotton Cellulose Naval Stores

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A Velvety Lawn in SIX WEEKS

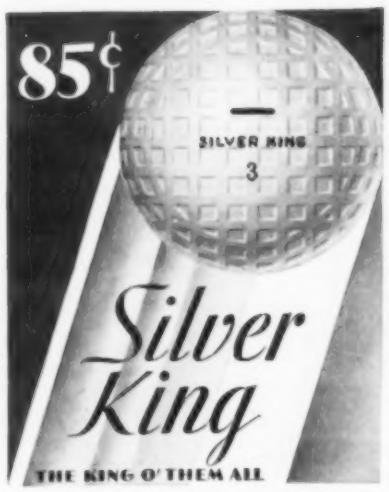
IN six weeks' time you can have a rich, velvety lawn of *Scott's Creeping Bent*. It chokes out weeds before they can grow and forms a deep, thick uniform turf that's everlasting. With proper care no replanting is necessary.

SCOTT'S CREEPING BENT

produces that luxuriant, beautiful grass long recognized as ideal for putting greens. It grows from stolons (chopped grass) instead of seed and can be planted any time. It grows readily everywhere except in the extreme South. How to make a new lawn—how to replant an old one—how to care for bent lawns—fully explained in free book, "Bent Lawns." Write for a copy.

O. M. Scott & Sons Company
393 Main St. Marysville, Ohio

You may be hooking, you may be slicing, your putting may be as erratic as a left-handed earthquake—but if you are playing the Silver King you can be dead certain it isn't the fault of the ball.



They save money for industry

. . . the MULTIGRAPH saves it for them

REDUCING costs for industrial organizations is a specialty of the Youngstown Pressed Steel Company. YPS developments in pressed steel for manufacturers eliminate machining and reduce assembly costs. YPS material handling equipment reduces space cost and handling costs.

What YPS does for Industry, the Multigraph does for YPS. Says W. G. Armstrong, assistant to the president, "We use it (the Multigraph) for personalized form letters, reprints of our national advertising which accompany these letters, imprints on letterheads and advertising matter, factory forms, etc.

"The savings that result from this method have made our Multigraph a most profitable investment.

"It costs a great deal less to carry electrotypes and print enclosures, reprints, etc., in small quantities as needed than it does to carry a stock of printed matter, and it reduces possibility of loss through obsolescence."

Savings for YPS have retired their investment in Multigraph equipment in two years. (How often do you find an investment that pays 50% per annum?)

In addition to all of which, as Mr. Armstrong observes, "The Multigraph has been a vital factor in our sales promotion work and has made it possible for us to do many things which otherwise would have been impractical."

Any Multigraph representative can give you additional instances of what the Multigraph has done both as a sales-producer and a cost-reducer. Look him up in your telephone book or write . . .

THE AMERICAN MULTIGRAPH SALES COMPANY
1834 East 40th Street Cleveland, Ohio
THE MULTIGRAPH SALES COMPANY, LIMITED,
137 Wellington Street, W., Toronto, Ontario

The Multigraph department of the Youngstown Pressed Steel Company and (at left) some of the office and factory forms which it produces.

The **MULTIGRAPH**

All American Steel Office Equipment *is* Standardized

When you buy All American desks, files or supplies from an All American Dealer the matter of price, quality, match up, delivery, maintenance costs and dozens of other irritating aspects is reduced to the most perfect plan of simplified purchasing ever achieved in the Steel Office Furniture Business.

And since All American steel *is* Standardized, it naturally represents the Biggest Dollar Value any equipment dollar can find.

Save with Steel

Write for interesting booklet on Standardization of Manufacturing, Distributing and Using Steel Office Equipment.

Browne-Morse Company
Muskegon, Michigan

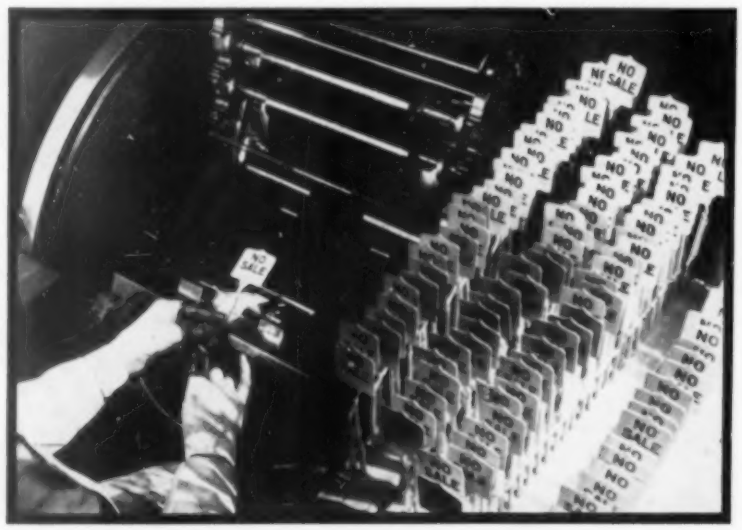
He had eccentric habits which he urged upon all his executives and underlings. A mania for cleanliness and neatness would sometimes lead him to personally inspect the desk drawers of his major executives to see if they were orderly.

Because no one could predict this man's reactions he was feared, but this was no source of regret to him, who above all things wanted to be considered a consummate genius, a master of men and organization. The danger signal was "Well, indeed!" which indicated that something erratic was about to happen.

Toward the end of his life Patterson's pre-occupation with health was almost a mania (see diet chart on page 71). He believed in early rising, and executive desks at The Cash are still apt to open at seven-thirty. Patterson got the idea that a brisk horseback ride at 6:30 A.M. would improve health and efficiency, so at dawn for a number of months he and his aids could be seen cantering across Hills and Dales (a 350 acre tract containing an eighteen-hole golf course which he gave to the city of Dayton). Horseback riding at N. C. R. is still popular. He never considered N. C. R. and the executives as anything but an extension of his own restless personality. He would try everything once and he expected everyone else to try it too. What was good for John Henry Patterson was good for everyone at the factory and helped to produce more and better registers. He sold registers this way, he trained men this way. When he heard of Fletcher's principle of masticating food forty times, many of his executives went in, perforce, for Fletcherizing. One doctor told him he ought to drink a glass of hot water frequently; therefore, in the midst of a consultation with department heads, hot water would arrive, not for him alone but for the department heads, too. The meeting would proceed—an analysis of sales in Alabama—a description of a complicated cam — hot-water-sipping.

The Patterson business methods are out-dated, the Patterson cash registers give place to new. The incredible Pattersonian accounting, consisting merely of bank balance, current liabilities, profit per register, and sales per diem, has been engulfed by scientific analysis of modern industrial finance. Even so. N. C. R. has a personality such as few corporations can boast of. N. C. R. has the breath of life because, over a period of nearly thirty years, one man could never clearly distinguish between N. C. R. and himself.

Most specifically, N. C. R.'s two traditions of research and sales-pressure will bear the Pattersonian stamp upon them forever. In producing machines for the future, the present N. C. R. is following out what Patterson once said, that "The first sale of any device is to be considered only as a first lesson to the consumer. The big sales are always in the future." And as for modern salesmanship, in organizing the bigger-or-bust drive of 1930 General Manager Barringer has adopted a slogan. It is: "TO BE CONTENT WITH RESULTS ACHIEVED IS THE FIRST SIGN OF BUSINESS DECAY." This is no far cry from John Henry Patterson's "The business that is satisfied with itself . . . is dead."



The Heritage of 49 Years of Experience

The William Bayley Company was founded 49 years ago with one idea — to make things of metal — things that would endure — for structural requirements and for buildings.

But permanence was not the only aim, for from the beginning the design of Bayley products has been constantly improved to meet the more modern standards in architecture.

As a consequence, Bayley Steel Windows and Doors are today known not only for their lifetime service but also for their outstanding design.

In the early days of the William Bayley Company, engineering was less specialized than it is today, and men in the Bayley shops received training in the fundamentals of design, pattern-making, casting in iron and bronze, fabricating and in the installation of products in buildings and bridge structures.

It is noteworthy that the present Bayley organization includes many of these craftsmen, and in some cases also their sons.

Two shops in the home town of Springfield, Ohio, make Bayley Steel Windows and Doors, and a chain of district offices and warehouses throughout the United States and in foreign lands support and serve selling connections and agencies.

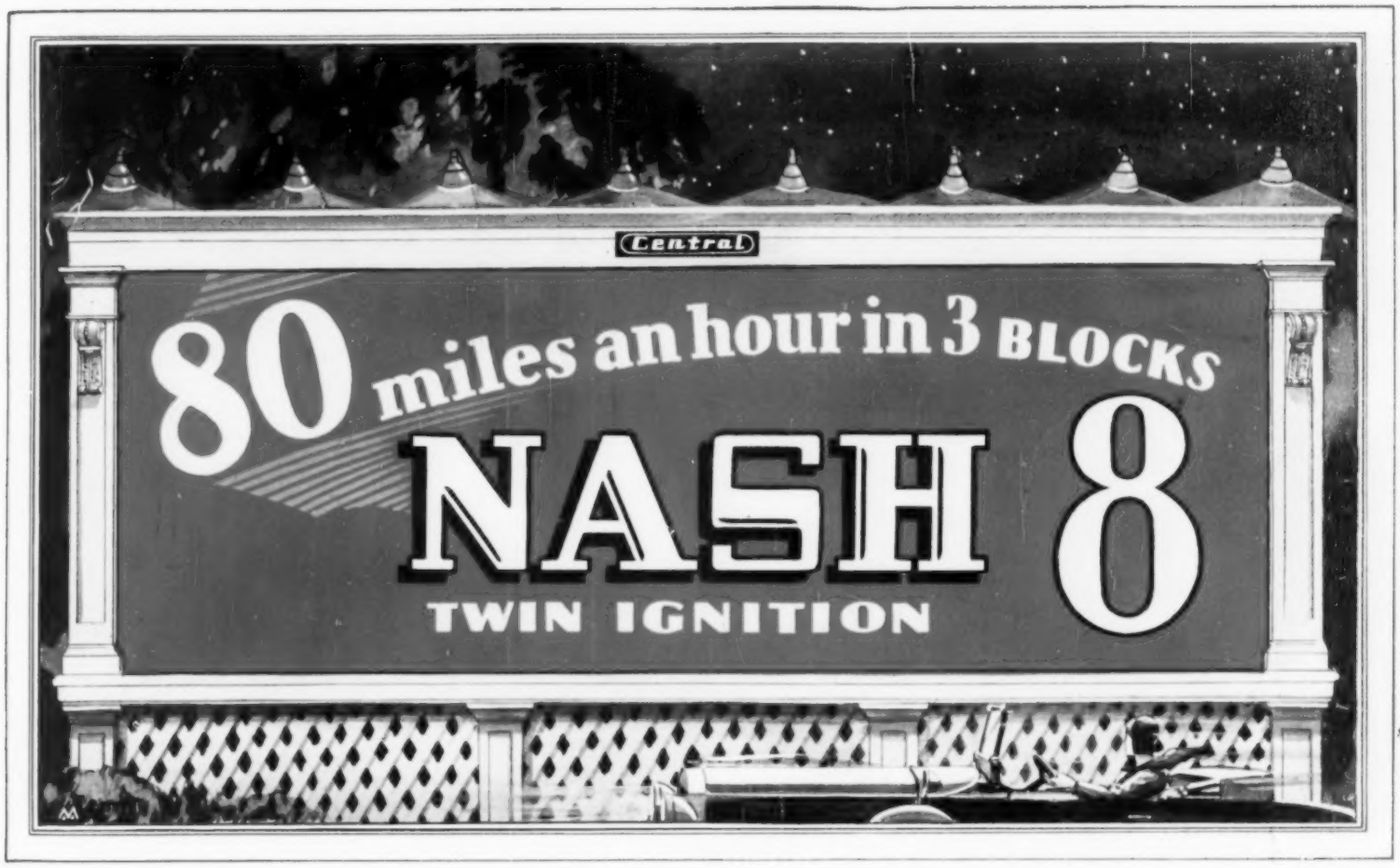
So it is that when you specify Bayley Steel Windows and Doors you are assured products as durable in service and as attractive in appearance as 49 years of experience, modernized facilities and large resources can produce. You are also assured thorough engineering cooperation, based on two generations of practice.

THE WILLIAM BAYLEY CO.
Springfield, Ohio

BAYLEY
STEEL WINDOWS & DOORS

District Offices
New York, 67 W. 44th St.
Boston, 5 Park St.
Chicago, 75 E. Wacker Drive,
Cleveland, 449 Terminal Tower
Washington, 1427 I St., N. W.
Atlanta, 407 Bona Allen Bldg.

Sales Agencies also in Principal Cities



America is outdoor-minded! The motor car made it so. I am materially aided in reaching and selling my market thru Outdoor Advertising. And it pays!

PRESIDENT
REEKE-NASH MOTOR CO.
CLEVELAND, OHIO

This is the story of successful selling. It is the experience of one of America's foremost distributors. He has proven the effectiveness of the Outdoor message. An outstanding sales record confirms his contentions.

¶ Today—the purchasing power of the nation is on the highways. We are a nation of Outdoor enthusiasts. Ever on the go . . Doing things . . Going places. Mental reactions are fast. We are headline readers. Selling must be geared to the market.

¶ Outdoor Advertising dominates the motoring millions . . Color commands the eye. The message flashes. A mental impression is registered. Constant repetition builds the buying impulse. Desire is created. A decision is made. Business results.

THE CENTRAL OUTDOOR ADVERTISING COMPANY

1028 CARNEGIE AVENUE
CLEVELAND

Central

320 VANCE STREET
TOLEDO

Stalemated!

No wonder the White King looks depressed. It's White's turn and he can't make a move. Wouldn't any executive feel depressed who, with ample forces, found himself like a chess player in a stalemate position?

Late figures, insufficient figures, as typified by the Black King, may be keeping you from making important business moves.

Monroe methods and Monroe machines will give you promptly the routine figures—plus the *extra* figures which are so essential to plan intelligently for the future.

You don't need extra help to get these figures—your own office force, trained in your own business, can quickly be shown how simple and easy it is to apply Monroe short-cuts without upsetting your present system.

The combined knowledge and experience of the Monroe organization gained through constant contact with a thousand and one businesses is at your call. Telephone your local Monroe representative or mail the coupon.

SERIES 3
MONROE ADDING-CALCULATOR
with full automatic division

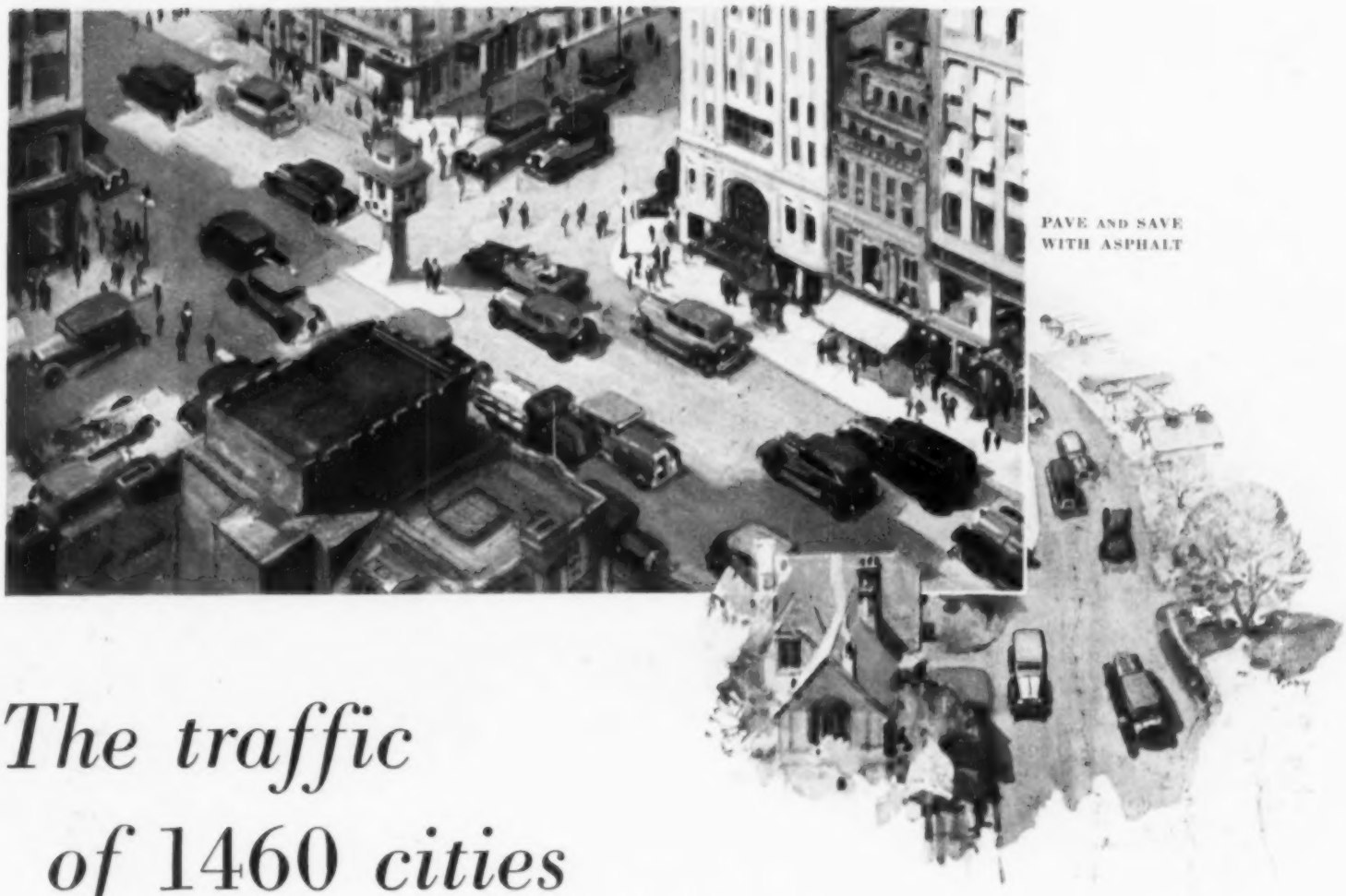
MONROE
HIGH SPEED ADDING-CALCULATOR
The Machine for Every Desk

Monroe Calculating Machine Co., Inc.
Orange, New Jersey.
We would like further information about the Monroe Adding-Calculator.

Name_____

Firm_____

Address_____



PAVE AND SAVE
WITH ASPHALT

The traffic of 1460 *cities* is carried on TEXACO ASPHALT

RESEARCH . . . THE GUIDE TO PROGRESS

Anticipating every development; insuring ever higher standards of quality . . . Texaco Laboratories are the source of Texaco progress.

TEXACO

The mark of quality for petroleum products

¶ There are no finer streets in the world than the broad thoroughfares of our own great cities. Two out of three of these cities with a population of 25,000 or more, have Texaco Asphalt pavements. ¶ There are no finer roads—*anywhere*—than our own magnificent national highways criss-crossing the continent. From Boston to New Orleans, from New York to Denver, there is today a vast network of perfectly surfaced Texaco-paved streets and highways. ¶ In the manufacture of asphalt as in every branch of our nation's industry and commerce there shines one name, one symbol—Texaco—which typifies recognized quality in the petroleum field.

THE TEXAS COMPANY

Refiners of a complete line of Texaco Petroleum Products, including Gasoline, Motor Oil, Industrial Lubricants, Railroad and Marine Lubricants, Farm Lubricants, Road Asphalts and Asphalt Roofing.

Now for a Camel!

Camel's mellow fragrance heightens every pleasure —a cigarette made for real smoke enjoyment.

Don't deny yourself the luxury of

Camels

© 1930, R. J. Reynolds Tobacco Company, Winston-Salem, N. C.